

SECTION 02010 – EXISTING SUBSURFACE CONDITIONS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Examination of the Site

1. Before submitting bids, the CONTRACTOR shall visit the site and inform themselves as to the location, nature of the work, equipment and facilities needed, general and local conditions prevailing at the site and all matters which may affect the work under this contract.
2. Before submitting bids, the CONTRACTOR shall examine all sources of information concerning subsurface soil and groundwater conditions. Each bidder shall draw their own conclusions concerning how these affect their work. Conditions which would not permit the CONTRACTOR to fulfill the intent of the contract shall be brought to the attention of the OWNER consistent with Notice to Contractors.
3. Subsurface Information: A geotechnical data report summarizing subsurface conditions and a memorandum summarizing the results of a test pit exploration program have been prepared for the project by Haley & Aldrich, Inc., dated September 10 and 4 December, 2008, are included as Attachments A and B, respectively.

B. Test Boring Results

1. The OWNER assumes no responsibility for the accuracy of the test results as shown in the appended reports. They are included only as a general indication of the materials likely to be found adjacent to the holes bored at the site of the proposed work. The CONTRACTOR shall examine this data and make their own investigation and other preliminary data, and shall base their bid on his/her opinion of the conditions likely to be encountered.
2. The bidder's submission of their proposal shall be considered "prima facie" evidence that they have made their examination as described in this Section.

1.02 RELATED REQUIREMENTS

A. Instructions to Bidders

PART 2 – PRODUCTS (not applicable)

PART 3 – EXECUTION (not applicable)

End of Section

Attachments:

Attachment A: Report entitled, "Geotechnical Data Report, MaineHealth / United Way Development, Somerset and Chestnut Streets, Portland, Maine," prepared by Haley & Aldrich, Inc., dated 10 September 2008

Attachment B: Memorandum entitled, "Results of Test Pit Exploration Program, MaineHealth / United Way Development, Somerset and Chestnut Streets, Portland, Maine," prepared by Haley & Aldrich, Inc., dated 4 December 2008.

Attachment A

**GEOTECHNICAL DATA REPORT
MAINEHEALTH / UNITED WAY DEVELOPMENT
SOMERSET AND CHESTNUT STREETS
PORTLAND, MAINE**

by

**Haley & Aldrich, Inc.
Portland, Maine**

for

**Maine Medical Center
Portland, Maine**

**File No. 35611-000
10 September 2008**

Haley & Aldrich
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Portland, ME 04101-2617
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10 September 2008
File No. 35611-000

Maine Medical Center
22 Bramhall Street
Portland, Maine 04102-3175

Attention: Daniel F. Doughty, AIA
Director

Subject: Geotechnical Data Report
Maine Health/United Way Development
Somerset and Chestnut Streets
Portland, Maine

Dear Dan:

This data report presents the results of the geotechnical field investigation and laboratory test program conducted in support of the subject project. This work was undertaken at your request and in accordance with our proposal dated 2 July 2008 and your subsequent authorization.

We have coordinated our work with the following project team members:

- | | | |
|---|--|--|
| ■ | Maine Medical Center (MMC) | Owner |
| ■ | Consigli Construction Co., Inc. (Consigli) | General Contractor |
| ■ | Scott Simons Architects (SSA) | Architect (Garage) |
| ■ | Harriman Associates, Inc. (Harriman) | Architect/Structural/MEP
(Offices) |
| ■ | Becker Structural Engineers, Inc. (BSE) | Structural Engineer (Garage) |
| ■ | Woodard & Curran (W&C) | Civil Engineer (Garage and
Offices) |
| ■ | John Tewhey Associates (JTA) | Environmental Compliance |

This report has been prepared for use by the design team during the design development (DD) and contract document (CD) phases of the project. A final geotechnical engineering report will be issued separately outlining foundation support and other geotechnical recommendations for the east office building and parking garage.

It is our intent that this report be included in the CD set or as a reference document in the CDs for use by prospective bidding contractors.

ELEVATION DATUM

Elevations referenced herein are in feet and reference Portland City Datum (PCD). Portland City Datum relates to the National Geodetic Vertical Datum of 1929 (NGVD 29) as follows:

$$\text{Elevation in ft (PCD)} = \text{Elevation in ft (NGVD 29)} + 0.02 \text{ ft}$$

SITE LOCATION, EXISTING CONDITIONS & PREVIOUS USE

The proposed development area is located in the Bayside area of Portland. This portion of the Back Cove region, including this site, once consisted of tidal mudflats (see 1886 Sanborn Maps for area in Appendix D) and was filled with demolition debris (brick, concrete, rock fragments and wood), refuse, ash and soil during the 18th, 19th and 20th centuries, a great portion of which was generated by the Great Portland Fire of 1866.

The approximate 3-acre site is bound by Elm Street to the south, Somerset Street to the east, commercial parcels to the west and Chestnut Street to the north. This parcel is currently undeveloped. Existing site grades range from El. 9 around the perimeter to El. 12 at the center of the site. A portion of the parcel was formerly occupied by the Union Branch rail yard. The general site location is shown on Figure 1, Project Locus. Historical Sanborn Maps of the site are provided in Appendix F.

PROPOSED SITE DEVELOPMENT

It is our understanding that the principal components of the site development include the following:

- East Office Building – eight-story, approximately 84,000 square foot (sf) office building located at the east end of site, adjacent to Somerset and Chestnut Streets.
- West Office Building – future ten-story, approximately 100,000 sf office building located at the west end of site, adjacent to Somerset and Elm Streets.
- Parking Garage – seven-story, approximately 700-car parking structure located between the east and west office buildings, along Somerset Street.

It is our understanding that the feasibility of constructing one level of below-grade parking within the above-grade footprint of the parking garage will be considered by the design team during the DD phase. It has not yet been determined if the east and west office buildings will be structurally connected or separate from the parking garage. The Trust for Public Land will be designing/constructing a public trail that will be integral to the proposed site development and will run along the north side of the site behind the office buildings and garage.

Based on discussions with Harriman and W&C, it is our understanding that proposed site grades will be within 1 ft of existing site grades.

SUBSURFACE EXPLORATION PROGRAM

Previous Explorations

Previous explorations were conducted at the site in association with three separate projects: 1) Portland Brownfield's Project completed by Tewhey Associates in 1998, 2) Phase II Environmental Site Assessment (ESA) completed by Haley & Aldrich in 2000 on the former Union Branch Rail Line for the Maine Department of Transportation, and 3) Master Planning Geotechnical Investigation completed by Haley & Aldrich in 2006 for SSA on behalf of the City of Portland.

Explorations consisted of both test borings and test pits. The locations of the explorations are shown on Figure 2, Site and Subsurface Exploration Location Plan. Logs detailing subsurface soil, rock and groundwater conditions for previous explorations are provided in Appendix A.

Portland Brownfield's Project Explorations (1998)

A total of ten test pits, designated TP-1 through TP-10, were excavated as part of the Portland Brownfield's project completed by Tewhey Associates in October 1998. Test pits were excavated by Commercial Paving & Recycling of Scarborough, Maine. Of these explorations, only TP-3 through TP-6 were excavated within the vicinity of the proposed office buildings and parking garage. Only these explorations are discussed herein. Test pits were excavated to depths ranging from approximately 10 to 12 ft below ground surface (BGS) and were monitored in the field by Tewhey Associates.

Phase II ESA Explorations (2000)

A total of fifteen test borings, designated B101 through B115, and twenty-six test pits, designated TP101 through TP125, were drilled/excavated for the Phase II ESA completed by Haley & Aldrich in November 2000. Of these explorations, only test boring B110(OW) and test pits TP103 through TP105 and TP117 through TP122 were conducted at the subject site. Only these explorations are discussed herein.

The test boring was drilled by Maine Test Borings, Inc. of Brewer, Maine and was advanced to a depth of 12 ft BGS using a Mobile Drill B-47 track mounted drill rig with 4.25-in. inside diameter (ID) hollow stem augers (HSA). Soil samples were collected continuously through fill soils and into naturally deposited soils by driving a 1-3/8-in. ID split-spoon sampler with a 140-lb hammer dropped from a height of 30 in., as indicated on the test boring logs. The number of hammer blows required to advance the sampler through each 6 in. interval was recorded and is provided on the test boring logs. The Standard Penetration Test (SPT) N-value is defined as the total number of blows required to advance the sampler through the middle 12 in. of the 24-in. sampling interval. An observation well was installed in completed borehole B110.

The test pits were excavated by Environmental Projects, Inc. of Gray, Maine and were advanced to depths ranging from 3.5 to 12.5 ft BGS using a Komatsu tracked excavator.

Master Planning Explorations (2006)

Eleven test borings, designated HA06-1 through HA06-11, were drilled in association with the Bayside Parking Garage, proposed for an adjacent property and a Master Planning study partially conducted on the subject parcel. Only test borings HA06-7 through HA06-8 were drilled in the vicinity of the proposed east office building and parking garage and are discussed herein.

Test boring locations were laid out in the field by Haley & Aldrich by taping/pacing distances from existing site features. "As-drilled" test boring locations were recorded in the field by Haley & Aldrich using GPS survey equipment.

Subsurface explorations were drilled using trailer-mounted Mobile Drill B-47 drill rig. Test borings were drilled to depths of 54 and 67 ft BGS, respectively, using 3.0-in. (NW-size) ID steel casing. Soil samples were collected at standard, 5-ft intervals using the same methodology described in the previous section.

In-situ vane shear tests were conducted within the glaciomarine clay deposit in test boring HA06-7. Vane shear tests were performed to provide information on the undrained shear strength and compressibility characteristics of the glaciomarine clay present at the site. Results of the vane shear testing are summarized in Table II and are provided on the test boring logs in Appendix A.

Recent Explorations

A total of thirteen test borings, designated HA08-1 through HA08-13, were drilled within the limits of the proposed office buildings and parking garage.

Test boring locations were laid out in the field by Haley & Aldrich by taping/pacing distances from existing site features. "As-drilled" test boring locations were recorded in the field by Haley & Aldrich using GPS survey equipment.

Subsurface explorations were drilled using track-mounted Mobile Drill B-50 drill rig. Test borings were drilled to depths ranging from 14 to 102 ft BGS using 3.0-in. (NW-size) or 4.0-in. (HW-size) ID steel casing. Soil samples were collected continuously through the fill and harbor bottom deposits and at standard, 5-ft intervals, or 10-ft intervals thereafter using the methodology described in the previous sections. Soil samples were preserved in glass jars. These samples are currently stored at our office and are available for viewing upon request.

Test borings HA08-5, HA08-7 and HA08-13 were advanced into bedrock using a 2.0-in. (NQ-size) ID diamond-tipped core barrel. Rock core samples are also being stored at our office and are available for review upon request.

In-situ vane shear tests were conducted within the glaciomarine clay deposit in several of the test borings. Vane shear tests were performed to provide information on the undrained shear strength and compressibility characteristics of the glaciomarine clay at the site.

Results of the vane shear testing are summarized in Table II and are provided on the test boring logs in Appendix B.

A total of five, relatively undisturbed samples of glaciomarine clay were obtained in test borings HA08-4, HA08-8 and HA08-10. The samples were collected in order accurately determine the compressibility characteristics and the stress history of the clay. The samples were obtained by advancing a thin-wall Shelby Tube sampler into the clay using a piston sampler. Drilling mud was used while advancing the test borings in order to minimize soil disturbance. The drilling mud consists of a relatively thick and smooth mixture of water and bentonite-based powder.

Three observation wells were installed in completed boreholes HA08-5, HA08-7 and HA08-12 to provide information on the static groundwater level within the footprint of the proposed buildings and to determine whether the groundwater levels at the site are affected by tidal fluctuations in nearby Back Cove. The observation wells consisted of 2-in. ID, machine-slotted PVC pipe and solid PVC riser pipe extending approximately 3 ft above existing ground surface. The observation wells were outfitted with a steel guardpipe and steel lock/cap assembly. Observation well installation and groundwater monitoring reports are provided in Appendix C.

SUBSURFACE CONDITIONS

Soil/Bedrock Conditions

Generally, subsurface explorations encountered the following geologic units, presented in order of increasing depth below existing ground surface:

- Bituminous Concrete/Fill
- Harbor Bottom Deposit
- Glaciomarine Clay
- Glaciomarine Sand
- Glacial Till
- Bedrock

Refer to Table I for a summary of subsurface explorations, Appendix A for historic subsurface exploration logs and Appendix B for recent test boring logs for more detailed information regarding the conditions encountered at the site. A brief description of each geologic unit is provided below.

Bituminous Concrete/Fill

The Bayside region of the Back Cove area was once a tidal mudflat area and it has a long history of filling. Approximately 10 to 15 ft of fill overlies the entire site. Several different types of material were encountered within this layer and consisted of the following:

- poorly graded to well graded GRAVEL (SP to SW) with varying percentages of silt,
- silty GRAVEL (GM)
- silty SAND (SM) with varying percentages of gravel,
- poorly graded to well graded SAND (SP to SM) with varying percentages of silt,
- Rock fill was encountered in test boring HA08-2 between 10 and 14 ft BGS.

The fill soils generally contained ash, cinders, and brick and concrete fragments.

In addition, bituminous concrete was encountered at the ground surface in test borings HA08-1, HA08-3 and HA08-4, generally within the limits of the existing parking lot located on the south end of the site. The thickness of the material ranged from 0.1 to 1.0 ft.

Harbor Bottom Deposit

This deposit was encountered in all the test borings with the exception of HA06-7, HA06-8, HA08-2 and HA08-13. This deposit was likely exposed at the historic ground surface in the tidal/mudflat area of the Back Cove prior to site filling (see Sanborn maps in Appendix F). Where encountered, the thickness of the layer ranged from approximately 1 to 5.5 ft. The material typically consisted of gray, sandy ORGANIC SILT (OL/OH) with varying percentages of organic matter (rootlets, wood fragments etc.) and shells. In some locations the material consisted of gray SILT (ML) with varying amounts of sand or gray silty SAND (SM). The deposit was generally very soft to very stiff with SPT N-values ranging from 1 to 24 bpf.

Glaciomarine Clay

Glaciomarine clay was encountered in each test boring. The deposit ranged in thickness from approximately 20 to 55 ft and generally increases in thickness to the south and west. The upper 5 to 8 ft of the deposit consisted of olive gray lean CLAY (CL) and was typically medium stiff to stiff with undrained shear strengths ranging from 1,000 to 1,700 pounds per square foot (psf) (referred to herein as the clay "crust"). The lower portion of the deposit consisted of soft to medium stiff, gray lean CLAY (CL) with undrained shear strengths typically ranging from 400 to 800 psf.

Glaciomarine Sand

Glaciomarine sand was encountered directly beneath the glaciomarine clay in test borings drilled in the northeastern portion of the site (HA08-8, HA08-10, HA08-11 and HA08-13). The thickness of the deposit ranged from approximately 5.5 to 12 ft and generally increased in thickness to the north and east. The material typically consisted of gray, poorly graded SAND (SP), well graded SAND (SW), or silty SAND (SM). The soil was generally loose to medium dense with SPT N-values ranging from 4 to 21 bpf.

Glacial Till

Glacial till was encountered either directly beneath the glaciomarine clay or the Glaciomarine Sand in all test borings with exception of HA08-8, HA08-12 and HA08-13. Where encountered, the thicknesses of the layer ranged from approximately 1.5 to 30 ft (HA08-1) and generally increased in thickness to the south and west. The glacial till generally consisted of gray silty SAND (SM) with varying amounts of gravel. The soil was typically medium dense to very dense with SPT N-values ranging from 14 to in excess of 150 bpf. Cobbles and boulders were not encountered in the till during drilling of the test borings.

Bedrock

Bedrock was sampled in test borings HA08-5(OW), HA08-7(OW) and HA08-13. Bedrock encountered at the site consists of moderately hard, fresh to highly weathered, dark gray CHLORITE SCHIST or moderately hard, moderately to highly weathered, dark gray SILTSTONE. Primary joints were dipping at near vertical angles. Both types of bedrock encountered at the site are considered part of the Cape Elizabeth Formation. At most test boring locations several feet of highly weathered bedrock was encountered.

Rock quality designation (RQD) is a common parameter that is used to help assess the competency of sampled bedrock. RQD is defined as the sum of pieces of recovered bedrock greater than 4 in. in length divided by the total length of recovered bedrock. RQD values for bedrock encountered at the site ranged from 0 to 70 percent and were typically less than 20 percent.

Groundwater Conditions

Haley & Aldrich measured groundwater levels in the observation wells installed in completed boreholes HA08-5, HA08-7 and HA08-12. Initially, the groundwater level data was collected periodically using a manually operated water level indicator. Beginning on 7 August 2008 downhole transducers were installed in the observation wells and were programmed to record the groundwater level in the wells every 15 minutes. This was done to determine whether the static groundwater level within the proposed building/garage footprints is influenced by tidal fluctuations in nearby Back Cove. All groundwater depths were measured relative to the existing ground surface. The transducers were removed from the observation wells on 22 August 2008.

Based on the data collected between 7 and 22 August 2008, groundwater levels were measured between 6 and 8 ft below existing ground surface and do not appear to be influenced by tidal fluctuations in Back Cove.

Groundwater levels may fluctuate with season, precipitation, temperature and construction activities. Therefore, groundwater levels during and following construction may vary from that indicated in the observation wells. Observation well installation and groundwater monitoring reports are provided in Appendix C.

SOIL SCREENING

During the test boring program, samples were collected continuously through the man-placed fill soils. The soil samples were collected and were preserved by placing aluminum foil over the top of each jar and storing them on ice until they were returned to the Haley & Aldrich laboratory in Portland, Maine.

Upon receipt of the samples in our laboratory each sample was screened using a Thermo 580B Photoionization Detector (PID) to check for the presence of hydrocarbons in the soil samples. The results of the sample screening are recorded on the Headspace Screening Report provided in Appendix E.

GEOTECHNICAL LABORATORY SOIL TESTING

A laboratory testing program was conducted to assist in soil classification, evaluate reuse potential of the in-situ fill soils, and for determination of engineering properties (strength and compressibility) of the naturally deposited glaciomarine clay soils. This information will be needed to develop final geotechnical recommendations for the project. The testing program included four grain size analyses, four natural water content tests, six Atterberg Limits tests, and two constant rate of strain consolidation (CRSC) tests (used to determine the compressibility and stress history characteristics). Prior to CRSC testing, radiography tests were conducted on tube samples collected during the subsurface exploration program. Radiography tests were run on five thin-walled tube samples of soil selected for laboratory testing to aid in assessing the sample quality, general material type and presence of areas of disturbance and variations in soils retrieved.

All laboratory testing was completed in accordance with applicable ASTM test procedures. Grain size analyses were conducted by Haley & Aldrich at our laboratory in Boston, Massachusetts. Natural water content, Atterberg Limits, and CRSC tests were completed by GeoTesting Express of Boxborough, Massachusetts. Laboratory test results are provided in Appendix D.

CLOSURE

Based on the "soft" condition of the soils present at the site, impacts of site grading, pavement evaluations and building and utility support should be considered carefully during the design-phase of the project. We will provide foundation support and other geotechnical design recommendations under separate cover during the DD phase of the project.

Maine Medical Center

10 September 2008

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We appreciate the opportunity to provide geotechnical and environmental engineering services on this project. Please do not hesitate to call if you have any questions or comments.

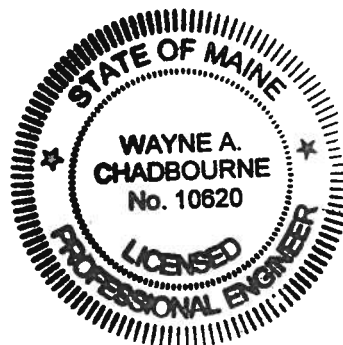
Sincerely yours,
HALEY & ALDRICH, INC.



Bryan C. Steinert
Engineer



Wayne A. Chadbourne, P.E.
Vice President



Attachments:

- Table I - Summary of Subsurface Explorations
- Table II - Summary of In-Situ Vane Shear Test Results
- Figure 1 - Project Locus
- Figure 2 - Site and Subsurface Exploration Location Plan
- Appendix A - Historic Subsurface Explorations
- Appendix B - Recent Subsurface Explorations
- Appendix C - Observation Well Installation and Groundwater Monitoring Reports
- Appendix D - Laboratory Test Results
- Appendix E - Soil Screening Headspace Reports
- Appendix F - Historic Sanborn Maps

- c: Scott Simons Architects; Attn: Scott Simon (.pdf only)
Harriman Associates, Inc.; Attn: Patrick Costin, Keith Brenner (.pdf only)
Woodard & Curran; Attn: Barry Sheff (.pdf only)
Becker Structural Engineers; Attn: Todd Neal (.pdf only)
Tewhey Associates; Attn: John Tewhey (.pdf only)
Consigli Construction Co.; Attn: David Thomas (.pdf only)

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REFERENCES

1. Haley & Aldrich, Inc. "Report No. 1: Engineering Properties of Foundation Soils, Long Creek-Fore River and Back Cove Area, Portland, Maine," prepared for Maine State Highway Commission, October 1969.
2. Haley & Aldrich, Inc. "Report on Phase II Environmental Site Assessment, Union Branch Rail Line Property, Portland, Maine," prepared for Maine Department of Transportation, December 2000.
3. Haley & Aldrich, Inc. "Report on Subsurface Explorations & Foundation Design Recommendations, Proposed Bayside Parking Garage, 25 Somerset Street, Portland, Maine" prepared for Scott Simons Architects, 22 September 2006.
4. Haley & Aldrich, Inc. "Master Planning Geotechnical Investigation, Proposed Bayside Development, Parcels A and B, Somerset Street, Portland, Maine" prepared for Scott Simons Architects, 25 October 2006

TABLE I
 Summary of Subsurface Explorations
 MaineHealth / United Way Development
 Somerset and Chestnut Streets
 Portland, Maine

Test Boring No. ¹	Estimated Ground Surface Elevation ^{2,3}	Bituminous Concrete	Fill	Thickness of Strata (ft)			Approx. Elevation of		Elevation of Bottom of Exploration ³	
				Harbor Bottom Deposit	Glaciomarine Deposit (clay)	Glaciomarine Deposit (sand)	Glacial Till	Top of Weathered Bedrock ³		Top of Competent Bedrock ^{3,5}
HA08-1	11.5	0.1	8.9	5.5	54.5	NE	29.5	-87.0	-90.5	-90.5
HA08-2	9.0	NE	14.0	NE	47.0	NE	5.6	-57.6	-59.7	-59.7
HA08-3	11.0	1.0	11.0	4.1	>1.9	NE	NE	NE	NE	-7.0
HA08-4	12.0	0.5	12.5	3.9	41.9	NE	5.6	-52.4	-54.0	-54.0
HA08-5(OW)	9.0	NE	10.5	2.5	40.0	NE	9.5	-53.5	-54.8	-59.8
HA08-6	10.0	NE	12.3	>1.7	NE	NE	NE	NE	NE	-4.0
HA08-7(OW)	12.0	NE	12.5	1.5	24.0	NE	22.1	-48.1	-50.0	-60.0
HA08-8	9.0	NE	9.5	4.3	29.2	5.6	NE	-39.6	-41.5	-41.5
HA08-9	11.0	NE	10.0	2.0	>2.0	NE	NE	NE	NE	-5.0
HA08-10	9.0	NE	10.0	1.3	23.9	10.3	2	-38.5	-40.5	-40.5
HA08-11	11.0	NE	12.5	1.7	19.8	12.0	6.5	-41.5	-44.0	-44.0
HA08-12(OW)	11.0	NE	11.6	2.4	>2.0	NE	NE	NE	NE	-5.0
HA08-13	9.0	NE	12.5	NE	27.1	7.0	NE	-37.6	-37.6	-47.0
HA06-7	10.5	NE	13.0	NE	51.0	NE	>3.0	NE	NE	-56.5
HA06-8	12.0	NE	14.0	NE	33.2	NE	1.6	-39.0	NE	-39.0
B112 (OW)	10.0	NE	9.9	>2.1	NE	NE	NE	NE	NE	-2.0
TP-3	11.0	NE	9.0	>1.5	NE	NE	NE	NE	NE	0.5
TP-4	11.0	NE	12.0	NE	NE	NE	NE	NE	NE	-1.0
TP-5	11.5	NE	10.5	NE	NE	NE	NE	NE	NE	-0.5
TP-6	12.0	NE	10.0	NE	NE	>1.0	NE	NE	NE	1.0
TP103	10.0	NE	9.5	1.5	NE	>1.0	NE	NE	NE	-2.0
TP104	10.0	NE	9.5	NE	NE	>0.5	NE	NE	NE	0.0
TP105	12.0	NE	>3.5	NE	NE	NE	NE	NE	NE	8.5
TP117	11.0	NE	>9.5	NE	NE	NE	NE	NE	NE	1.5
TP118	11.0	NE	>9.0	NE	NE	NE	NE	NE	NE	2.0
TP119	11.0	NE	>9.5	NE	NE	NE	NE	NE	NE	1.5
TP120	11.0	NE	>8.5	NE	NE	NE	NE	NE	NE	2.5
TP121	12.0	NE	>8.0	NE	NE	NE	NE	NE	NE	4.0
TP122	12.0	NE	10.0	>1.5	NE	NE	NE	NE	NE	0.5
TP123	10.0	NE	11.0	>1.5	NE	NE	NE	NE	NE	-2.5

Notes:

- Test boring locations are shown on Figure 2, Site and Subsurface Exploration Location Plan.
- Ground surface elevations at test boring locations are approximate and were estimated by interpolating between elevation contour data provided by Woodward & Curran
- Elevations are in feet and reference Portland City Datum.
- "NE" indicates stratum was not encountered in test boring.
- The top of competent bedrock is considered to be the elevation at which the advancement of the roller cone resulted in no additional penetration.

9/10/2008

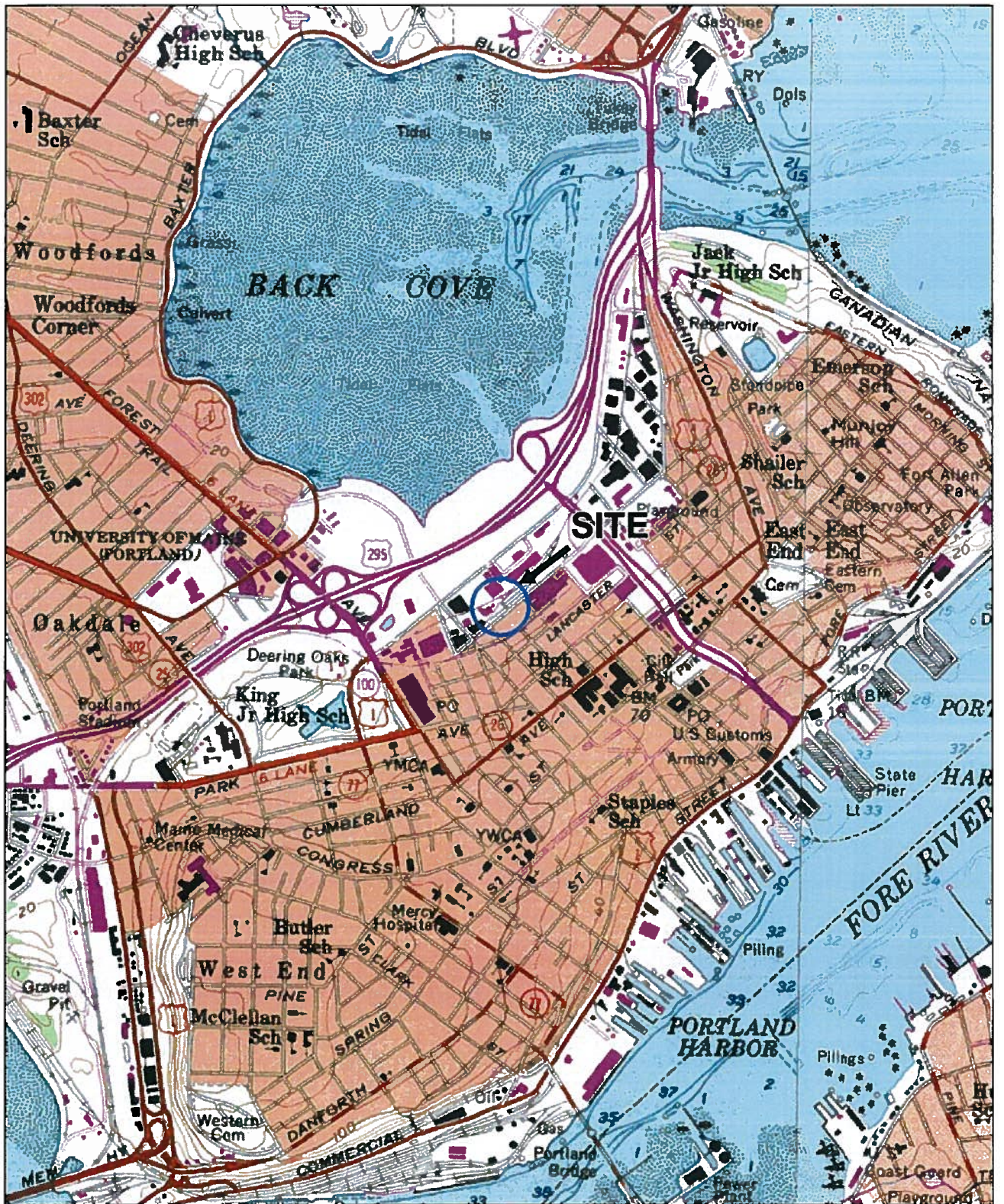
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TABLE II
Summary of In-Situ Vane Shear Test Results
MaineHealth / United Way Development
Somerset and Chestnut Streets
Portland, Maine

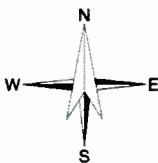
Test Boring No. ²	Approximate Ground Surface Elevation (ft) ^{1,3}	Vane Size (in. x in.)	Test No. ⁴	Depth below ground surface (ft)	Approximate Elevation (ft) ^{1,3}	V _{max} ^{5,7} (in-lbs)	V _{remolded} ^{5,7} (in-lbs)	S _u ^{6,7} (psf)	S _{u(remolded)} ^{6,7} (psf)
HA06-7	10.5	2 x 8.5	FV1	20.3 - 21.0	-9.8 - -10.5	-	-	1,680	-
			FV2	25.3 - 26.0	-14.8 - -15.5	-	-	840	270
			FV3	35.3 - 36.0	-24.8 - -25.5	-	-	590	110
			FV4	40.3 - 41.0	-29.8 - -30.5	-	-	580	170
			FV5	56.0 - 56.7	-45.5 - -46.2	-	-	860	-
HA08-1	11.5	2 x 8.5	FV1	25.3 - 26.0	-13.8 - -14.5	264	72	900	250
			FV2	35.3 - 36.0	-23.8 - -24.5	192	96	650	330
			FV3	45.3 - 46.0	-33.8 - -34.5	204	120	690	410
			FV4	56.3 - 57.0	-44.8 - -45.5	360	156	1,220	530
HA08-2	9.0	2 x 8.5	FV1	25.3 - 26.0	-16.3 - -17.0	180	60	610	200
			FV2	35.3 - 36.0	-26.3 - -27.0	120	36	410	120
			FV3	45.3 - 46.0	-36.3 - -37.0	168	48	570	160
			FV4	55.3 - 56.0	-46.3 - -47.0	144	36	490	120
HA08-4	12.0	3.5 x 8	FV1	22.3 - 23.0	-10.3 - -11.0	950	-	1,050	-
			FV2	27.3 - 28.0	-15.3 - -16.0	540	142	590	160
			FV3	30.3 - 31.0	-18.3 - -19.0	450	80	500	90
			FV4	35.3 - 36.0	-23.3 - -24.0	305	45	340	50
			FV5	40.3 - 41.0	-28.3 - -29.0	360	108	400	120
			FV6	45.3 - 46.0	-33.3 - -34.0	384	96	420	110
			FV7	50.3 - 51.0	-38.3 - -39.0	552	72	610	80
HA08-5(OW)	9.0	2 x 8.5	FV1	20.3 - 21.0	-11.3 - -12.0	212	75	720	260
			FV2	25.3 - 26.0	-16.3 - -17.0	213	59	720	200
			FV3	30.3 - 31.0	-21.3 - -22.0	215	51	730	170
			FV4	35.3 - 36.0	-26.3 - -27.0	175	85	600	290
			FV5	40.3 - 41.0	-31.3 - -32.0	175	55	600	190
			FV6	50.3 - 51.0	-41.3 - -42.0	205	109	700	370
HA08-7(OW)	12.0	2 x 8.5	FV1	20.3 - 21.0	-8.3 - -9.0	245	95	830	320
			FV2	25.3 - 26.0	-13.3 - -14.0	215	51	730	170
			FV3	30.3 - 31.0	-18.3 - -19.0	201	82	680	280
			FV4	35.3 - 36.0	-23.3 - -24.0	255	62	870	210
HA08-8	9.0	3.5 x 8	FV1	18.3 - 19.0	-9.3 - -10.0	420	60	460	70
			FV2	22.3 - 23.0	-13.3 - -14.0	552	48	610	50
			FV3	30.3 - 31.0	-21.3 - -22.0	346	108	380	120
			FV4	35.3 - 36.0	-26.3 - -27.0	708	132	780	150
			FV5	39.3 - 40.0	-30.3 - -31.0	936	72	1,030	80
HA08-10	9.0	3.5 x 8	FV1	19.3 - 20.0	-10.3 - -11.0	468	96	520	110
			FV2	23.3 - 24.0	-14.3 - -15.0	660	120	730	130
			FV3	27.3 - 28.0	-18.3 - -19.0	360	84	400	90
			FV4	30.3 - 31.0	-21.3 - -22.0	204	62	220	70
HA08-11	11.0	2 x 8.5	FV1	25.3 - 26.0	-14.3 - -15.0	215	50	720	170
HA08-13	9.0	2 x 8.5	FV1	20.3 - 21.0	-11.3 - -12.0	199	50	670	170
			FV2	25.3 - 26.0	-16.3 - -17.0	174	71	590	240
			FV3	30.3 - 31.0	-21.3 - -22.0	82	75	280	250
			FV4	35.3 - 36.0	-26.3 - -27.0	215	64	720	220

Notes:

1. Estimated ground surface elevations are based on interpretation of the site plans prepared by Woodard & Curran (measured to the nearest 0.5 ft).
2. Test boring locations were determined using GPS equipment and/or by taping and pacing from existing site features.
3. Elevations are measured in feet reference Portland City Datum.
4. Vane test numbers are shown on the test boring logs presented in Appendix A and B.
5. V_{max} and V_{remolded} represent direct peak and remolded vane shear values, respectively, measured in the field.
6. S_u and S_{u(remolded)} represent corrected undrained peak and residual shear strengths, respectively, based on the vane paddle size (rounded to the nearest 10 psf).
7. in-lbs = inch-pounds of torque, psf = pounds per square foot



SITE COORDINATES: 43°39'42"N 70°15'46"W



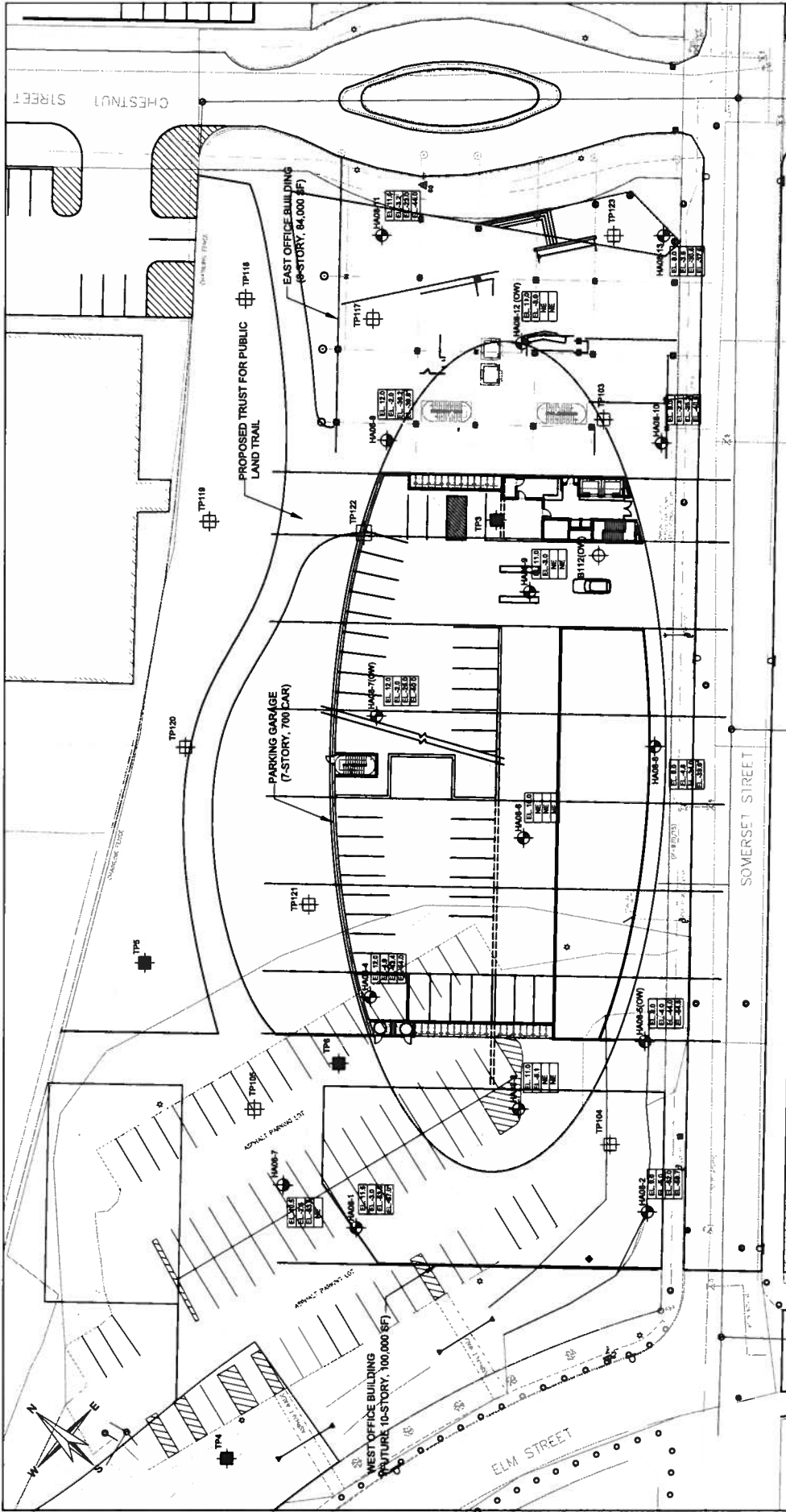
U.S.G.S. QUADRANGLE: PORTLAND WEST, ME

HALEY & ALDRICH MAINEHEALTH / UNITED WAY DEVELOPMENT
SOMERSET STREET
PORTLAND, MAINE

PROJECT LOCUS

SCALE: 1:24,000
SEPTEMBER 2008

FIGURE 1



HALEY & ALDRICH
 MAINE HEALTH / UNITED WAY DEVELOPMENT
 SOMERSET AND CHESTNUT STREETS
 PORTLAND, MAINE

**SITE AND SUBSURFACE EXPLORATION
 LOCATION PLAN**

SCALE AS SHOWN
 SEPTEMBER 2008

FIGURE 2

LEGEND:
 HMOB-1 HMOB-7
 HMOB-2 HMOB-8
 HMOB-3 HMOB-9
 HMOB-4 HMOB-10
 HMOB-5 HMOB-11
 HMOB-6 HMOB-12
 HMOB-13
 TP1 TP13

NOTES:
 1. EXISTING SITE CONDITIONS, CONTOURS OF EXISTING GROUND SURFACE ELEVATIONS AND LOCATION AND ORIENTATION OF EXISTING SITE FEATURES ARE TAKEN FROM THE ELECTRONIC AUTOCAD FILE "21887 2008.dwg" PROVIDED BY WOODWARD & CLARK ON 21 JULY 2008.
 2. THE LOCATION AND ORIENTATION OF PROPOSED SITE FEATURES ARE TAKEN FROM THE ELECTRONIC AUTOCAD FILE "PH1.dwg".
 3. LOCATIONS OF HISTORIC SUBSURFACE COLLAR CORERS WERE DETERMINED IN THE FIELD BY 1" UNDESIRED TEST MARKS FROM EXISTING SITE FEATURES. LOCATIONS OF "HMOB" AND "HMOB" SERIES OF TEST BORINGS WERE DETERMINED IN THE FIELD USING GPS SURVEY EQUIPMENT.
 4. ELEVATIONS ARE IN FEET AND REFERENCE PORTLAND CITY DATUM.
 5. SUBSURFACE EXPLORATIONS WERE MONITORED IN THE FIELD BY HALEY & ALDRICH PERSONNEL (EXCEPT FOR THE "TP1" SERIES OF TEST PITS, WHICH WERE MONITORED BY TERWAY ASSOCIATES).
 6. REFER TO APPENDIX A FOR LOGS OF HISTORIC SUBSURFACE EXPLORATIONS, APPENDIX B FOR LOGS OF RECENT SUBSURFACE EXPLORATIONS, AND APPENDIX C FOR OBSERVATION WELL INSTALLATION AND GROUNDWATER MONITORING REPORTS.
 7. GROUND SURFACE ELEVATIONS AT SPECIAL TEST BORING LOCATIONS ARE APPROXIMATE AND WERE ESTIMATED USING SITE TOPOGRAPHIC INFORMATION PROVIDED BY WOODWARD & CLARK.
 8. DESIGNATION AND LOCATION OF TEST BORING DRILLED BY MAINE TEST BORING, INC. OF BREWER, MAINE IN JULY AND AUGUST 2008.
 9. DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORING, INC. OF BREWER, MAINE IN AUGUST 2008.
 10. APPROXIMATE TOP OF CLAY ELEVATION.
 11. APPROXIMATE ELEVATION OF COLLAR CORER RETURN, IN BEDROCK.
 12. DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORING, INC. OF BREWER, MAINE IN NOVEMBER 2008.
 13. DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY ENVIRONMENTAL PRODUCTS, INC. OF ALBANY, MAINE IN NOVEMBER 2008.
 14. DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY COMMERCIAL PARTS & RESTORERS OF SCARBOROUGH, MAINE IN OCTOBER 1998.

11 (OW) ELEVATION CONTOUR OF EXISTING GROUND SURFACE
 NE SPACES OBSERVATION WELL INSTALLED IN COMPLETED BORING
 NE EXPOSED SOIL STRATA, ROCK WAS NOT ENCOUNTERED IN EXPLORATION
 NE EXPOSED COLLAR CORER RETURN IN BEDROCK NOT ENCOUNTERED. SEE TEST BORING LOG FOR DETAILS

0 20 40 60 80
 SCALE IN FEET

APPENDIX A

Historic Subsurface Explorations

**1998 Portland Brownfield's Project
Test Pit Logs**

TEWHEY ASSOCIATES

TEST PIT LOG

PROJECT:	Portland Brownfields- Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-3
INVESTIGATOR	J. Tewhey	LOCATION:	Middle of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
1.5	S-1	Coarse black sand and gravel with coal and ash (FILL).	1.0
		Light brown coarse sand to gray medium sand and silty sand (FILL).	2.0
			3.0
			4.0
			5.0
			6.0
1.5	S-2		7.0
			8.0
			9.0
		Black bay mud with glass and pottery chards.	9.0
			10.0
<1.0	S-3		11.0
		Bottom of Excavation = 10.5 ft.	11.0
			12.0
			13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments:	Sample ID in bold indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 4 ft below ground surface.

TEWHEY ASSOCIATES

TEST PIT LOG

PROJECT:	Portland Brownfields- Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-4
INVESTIGATOR	J. Tewhey	LOCATION:	West Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
		4-inches loam over brown gravel with lenses of black granular soils and bricks (FILL).	1.0
			2.0
			3.0
2.0	S-1	Dense black medium sand with silt (FILL).	4.0
			5.0
			6.0
1.5	S-2	Gray ash (FILL).	7.0
			8.0
<1.0	S-3	Demolition debris... bricks and wood fragments (FILL).	8.0
			9.0
			10.0
			11.0
		Black bay mud with glass and pottery chards.	12.0
		Bottom of Excavation = 12 ft.	13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments:	Sample ID in bold indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 7 ft below ground surface.

TEWHEY ASSOCIATES

TEST PIT LOG

PROJECT:	Portland Brownfields- Portland Terminal	BACKHOE:	Commercial Paving
PROJECT NO:	97-005		
DATE:	10-29-98	NO:	TP-5
INVESTIGATOR	J. Tewhey	LOCATION:	West Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
2.0	S-1	Brown gravel with lenses of black granular soils and bricks (FILL).	1.0
		Gray ash (FILL).	2.0
			3.0
			4.0
2.0	S-2		5.0
			6.0
			7.0
			8.0
			9.0
			10.0
		Black bay mud with glass and pottery shards.	11.0
		Bottom of Excavation = 11 ft.	12.0
			13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments:	Sample ID in bold indicates soil sample was submitted to laboratory for analysis.
Water Table Present:	Wetness observed at 4 ft below ground surface.

FEWHEY ASSOCIATES

TEST PIT LOG

PROJECT: Portland Brownfields- Portland Terminal	BACKHOE: Commercial Paving
PROJECT NO: 97-005	
DATE: 10-29-98	NO: TP-6
INVESTIGATOR: J. Tewhey	LOCATION: West Side of Site

PID (ppm)	Ref. Soil Samples (Recovery)	Description	Depth (Feet)
1.0	S-1	Coarse black sand and gravel with coal and ash (FILL).	1.0
			2.0
		Dark brown, black, silty fine sand (FILL).	3.0
			4.0
2.0	S-2	Gray ash (FILL).	5.0
			6.0
2.0	S-3	Black dump refuse... glass, wood, pottery, metal, leather, sewerage odor (FILL).	7.0
			8.0
			9.0
			10.0
		Dark gray silty clay with clam shells (native).	11.0
			12.0
		Bottom of Excavation = 11 ft.	13.0
			14.0
			15.0
			16.0
			17.0
			18.0
			19.0
			20.0

Comments: Sample ID in bold indicates soil sample was submitted to laboratory for analysis.

Water Table Present: Wetness observed at 5 ft below ground surface.

**2000 Phase II Environmental Site Assessment
Test Pit and Test Boring Logs**



TEST PIT LOG

Test Pit No. **TP103**

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 20 November 2000
Weather Cloudy
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water inflow is rapid from -HARBOR BOTTOM DEPOSIT-
El. Datum: **Water slow at 3.0 ft.(perched), rapid at 10.0 ft.**

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)	Grave		Sand		Field Test									
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0	103-1 0'	0.5		-RAILYARD FILL- (See 101-1)														
	103-2 1'		SW	Light brown well-graded SAND, few lenses of dark granular rail bed material as in 103-1			10	80	5	5								
2		2.0		-SAND FILL-														
	103-3 3'		ML	Olive-gray clayey SILT with sand and gravel, medium stiff -CLAYEY SILT FILL-														
4		4.0		-CLAYEY SILT FILL-														
	103-4 5.5'		ML	Gray clayey SILT with sand, very soft -CLAYEY SILT FILL-														
6		9.5		-CLAYEY SILT FILL-														
	103-5 9.5'			Black-brown organic material with some clay -HARBOR BOTTOM DEPOSIT-(FILL)														
8		11.0		-CLAYEY SILT FILL-														
	103-6 11'		CL	Olive-gray lean CLAY with silt, trace medium sand, medium stiff, presence of clam shell fossils is diagnostic of -NATIVE SOILS- <<C>-MARINE DEPOSIT-														
10		12.0		-CLAYEY SILT FILL-														
	103-6 11'			Bottom of Exploration at 12.0 ft.														

Obstructions:	Remarks:	Field Tests		
		Dilatancy	R - Rapid S - Slow N - None	
		Toughness	L - Low M - Medium H - High	
		Plasticity	N - Nonplastic L - Low M - Medium H - High	
		Dry Strength	N - None L - Low M - Medium H - High V - Very High	

Standing Water in Completed Pit		Boulders			Test Pit Dimensions (ft)	
at depth	ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Depth	12.0
measured after	hours elapsed	12" to 24"	=	=	Pit Length x Width	4.0 x 14.0
		over 24"	=	=		

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP104

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 20 November 2000
Weather Cloudy
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water emerges from ash at 6.0 ft., has slight sheen
EI. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel						Sand			Field Test				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0	104-1 0.5'			Gray coarse coal ash mixed with 20% silty LOAM -ASH FILL-														
2	104-2 1.5'	1.5	ML	Olive-gray clayey SILT with sand, stiff -CLAYEY SILT FILL-														
4		2.5		Gray, coarse coal ash -ASH FILL-														
6	104-3 7'	6.0		Dark brown to black heterogeneous mix of ash, organic marine deposit, trash and clayey SILT -ASH AND REFUSE FILL-														
8	104-4 9'			Black stained coarse COAL ASH with trash, glass, ceramic, leather, metal, shell, wood														
10		9.5	CL	Olive-gray lean CLAY with silt -MARINE DEPOSIT-														
		10.0		Bottom of Excavation at 10.0 ft.														

Obstructions:	Remarks:	Field Tests
		Dilatancy R - Rapid S - Slow N - None Toughness L - Low M - Medium H - High Plasticity N - Nonplastic L - Low M - Medium H - High Dry Strength N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit	Boulders	Test Pit Dimensions (ft)
at depth 7.5 ft	Diameter (in.) Number Approx. Vol. (cu.ft)	Pit Depth 10.0
measured after 0.25 hours elapsed	12" to 24" =	Pit Length x Width 4.0 x 14.0
	over 24" =	

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP105

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 20 November 2000
Weather Cloudy
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel					Sand			Field Test					
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0				Heterogeneous mix of used brick, sheets of metal, concrete blocks in matrix of brown sandy LOAM														
				-MIXED FILL-														
2				Solid mass of wood in matrix of black rubber/plastic prevented digging														
		3.5		Bottom of Excavation at 3.5 ft.														

Obstructions: Wood and rubber/plastic massive block

Remarks:

Field Tests			
Dilatancy	R - Rapid	S - Slow	N - None
Toughness	L - Low	M - Medium	H - High
Plasticity	N - Nonplastic	L - Low	M - Medium
Dry Strength	N - None	L - Low	M - Medium
	H - High	V - Very High	

Standing Water in Completed Pit		Boulders			Test Pit Dimensions (ft)	
at depth	ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Depth	3.5
measured after	hours elapsed	12" to 24"	=		Pit Length x Width	4.0 x 10.0
		over 24"	=			

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.



TEST PIT LOG

Test Pit No. **TP117**

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water entering pit slowly at 5.0 ft.
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel						Sand			Field Test				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0	117-1 0.5'	1.0		-RAILYARD FILL- (See 101-1)														
2	117-2 3'			Light brown to brown poorly-graded sand, mps = 0.25 in. with wavy lenses of dark brown sand		5	10	80	5									
4		5.0		-SAND FILL-														
6				Olive-gray clayey SILT with sand			5	5	30	60								
8	117-3 7.5'			-CLAYEY SILT FILL-														
		9.5		Bottom of Excavation at 9.5 ft.														

Obstructions:

Remarks: Hole collapsed due to failure of clayey silt fill.

Field Tests			
Dilatancy	R - Rapid	S - Slow	N - None
Toughness	L - Low	M - Medium	H - High
Plasticity	N - Nonplastic	L - Low	M - Medium
Dry Strength	N - None	L - Low	M - Medium
		H - High	V - Very High

Standing Water In Completed Pit
 at depth _____ ft
 measured after _____ hours elapsed

Boulders
 Diameter (in.) Number Approx. Vol. (cu.ft)
 12" to 24" =
 over 24" =

Test Pit Dimensions (ft)
 Pit Depth 9.5
 Pit Length x Width 4.0 x 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. **TP118**

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water slowly seeping at 6.5 ft.
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel						Sand			Field Test					
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength					
0		0.5		Brown sandy loam with organics and roots -SILT FILL-															
2	118-1 2.5'			Olive-brown to olive-gray clayey SILT FILL, stiff, becoming medium stiff to soft with depth -CLAYEY SILT FILL-															
4																			
6																			
8	118-2 7.5'	6.5		Olive-brown silty SAND, mps= 1.0 inch -SAND FILL-															
		8.5	SM	Black silty SAND	10	5	5	15	40	25									
		9.0		Bottom of Excavation at 9.0 ft.															

Obstructions:

Remarks: Clayey silt fill collapsed upon setting for a few minutes.

Field Tests

Dilatancy	R - Rapid	S - Slow	N - None		
Toughness	L - Low	M - Medium	H - High		
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High	
Dry Strength	N - None	L - Low	M - Medium	H - High	V - Very High

Standing Water in Completed Pit		Boulders		Test Pit Dimensions (ft)	
at depth	ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Depth
measured after	hours elapsed	12" to 24"	=		9.0
		over 24"	=		Pit Length x Width
					4.0 x 12.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP119

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water emerges from ash at 6.0 ft.
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel		Sand			Field Test									
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength					
0		0.3																	
	119-1 1'			Light brown to brown well-graded SAND, mps = 1.0 in.															
2	119-2 2'	1.5		SAND FILL Gray coarse coal ash with lenses of black railroad yard soils and light brown sand (as in 119-1)															
		3.0		ASH FILL															
4	119-3 4.5'			Gray coarse coal ash with mixed trash, all stained jet black, glass, brick, ceramics, leather, metal, wood															
6	119-4 7'			ASH AND REFUSE FILL															
8																			
		9.5		Bottom of Excavation at 9.5 ft.															

Obstructions:

Remarks: Standing water in pit has prominent petroleum sheen; no petroleum odor (cold weather may inhibit odor)

Field Tests

Dilatancy R - Rapid S - Slow N - None
Toughness L - Low M - Medium H - High
Plasticity N - Nonplastic L - Low M - Medium H - High
Dry Strength N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit

at depth 6.0 ft
measured after 0.25 hours elapsed

Boulders

Diameter (in.) **Number** **Approx. Vol. (cu.ft)**
12" to 24" =
over 24" =

Test Pit Dimensions (ft)

Pit Depth 9.5
Pit Length x Width 4.0 x 14.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

TEST PIT LOG

Test Pit No. TP120

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water entering pit rapidly from 6-7 ft.
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel						Sand			Field Test			
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
0	120-1 0'	0.5		Light brown poorly-graded SAND, mps = 0.25 in., grass, roots			10	80	5	5							
	120-2 1'				-RAILYARD FILL- (See 101-1)												
2		2.5															
4	120-3 5'				Gray coarse coal ash -ASH FILL-												
6		8.5															
8					Bottom of Excavation at 8.5 ft.												

Obstructions:

Remarks: Slight petroleum sheen on standing water, no petroleum odor

Field Tests				
Dilatancy	R - Rapid	S - Slow	N - None	
Toughness	L - Low	M - Medium	H - High	
Plasticity	N - Nonplastic	L - Low	M - Medium	H - High
Dry Strength	N - None	L - Low	M - Medium	H - High V - Very High

Standing Water in Completed Pit
 at depth 6.5 ft
 measured after 0.25 hours elapsed

Boulders
 Diameter (in.) Number Approx. Vol. (cu.ft)
 12" to 24" = =
 over 24" = =

Test Pit Dimensions (ft)
 Pit Depth 8.5
 Pit Length x Width 4.0 x 13.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP121

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel						Sand			Field Test				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0				Brown silty GRAVEL with sand, grass, roots GRAVEL FILL-	40	15	10	10	10	15								
1	121-1																	
2	121-2	2.0		-RAILYARD FILL- (See 101-1)														
		2.8																
4	121-3			Light brown to brown well-graded SAND, mps= 0.25 in., wavy lenses of dark brown sand -SAND FILL-		5	10	80	5									
6																		
7	121-4	7.0		Olive-gray calyey SILT with sand and gravel -CLAYEY SILT FILL-	5	5	5	5	20	60								
8		8.0		Note: Log platform at 8.0 ft. Bottom of Excavation at 8.0 ft.														

Obstructions: Wooden (log) platform or road at 8.0 ft. prevented more digging.

Remarks:

Field Tests	
Dilatancy	R - Rapid S - Slow N - None
Toughness	L - Low M - Medium H - High
Plasticity	N - Nonplastic L - Low M - Medium H - High
Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit		Boulders		Test Pit Dimensions (ft)	
at depth	ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Depth
measured after	hours elapsed	12" to 24"	=	=	8.0
		over 24"	=	=	Pit Length x Width
					4.0 x 11.0

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP122

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):** Water seeping slowly at 3.5 ft.
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel						Sand			Field Test				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0	122-1 0.5'	1.0		-RAILYARD FILL- (See 101-1)														
2	122-2 2'	3.0		Olive-brown clayey SILT with sand and gravel -CLAYEY SILT FILL-														
4	122-3 4'	6.0		Olive-gray clayey SILT with sand and gravel (sand lenses shed water into pit) -CLAYEY SILT FILL-														
6	122-4 8'	10.0		Olive-gray to gray coarse SAND with silt, some ash and marine organics from former back cove bottom -SANDY MIXED FILL-														
10	122-5 10.5'	11.5	CL	Native clay deposits (See 107-4) -MARINE DEPOSIT-														
				Bottom of Excavation at 11.5 ft.														

Obstructions:	Remarks: Water draining from sand lense between clay layers at 3.5 ft.	Field Tests	
		Dilatancy	R - Rapid S - Slow N - None
		Toughness	L - Low M - Medium H - High
		Plasticity	N - Nonplastic L - Low M - Medium H - High
		Dry Strength	N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit		Boulders			Test Pit Dimensions (ft)	
at depth	ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Depth	11.5
measured after	hours elapsed	12" to 24"	=		Pit Length x Width	4.0 x 12.0
		over 24"	=			

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST PIT LOG

Test Pit No. TP123

Project Union Branch Acquisition
Location Portland, Maine
Client Maine Department of Transportation
Contractor Environmental Projects, Inc.
Equipment Used Komatsu Excavator 0.75 Cubic Yard Bucket

File No. 80509-014
Date 21 November 2000
Weather Clear
H&A Rep J. Tewhey

Ground El.: ft **Location:** See Plan **Groundwater depths/entry rates (in./min.):**
El. Datum:

Depth (ft)	Sample ID	Stratum Change Depth (ft)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size, structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel		Sand			Field Test						
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
0	123-1 0'			-RAILYARD FILL- (See 101-1)												
	123-2 1'	1.0		Light brown well-graded SAND			5	80	10	5						
	123-3 1.5'	1.5		Olive-brwn clayey SILT with sand and gravel, dry, stiff												
2				-CLAYEY SILT FILL-												
		2.5		Olive-gray clayey SILT with sand and gravel, wet, soft												
				-CLAYEY SILT FILL-												
4	123-4 4'															
6		6.0		Gray coarse coal ash												
	123-5 7'			-ASH FILL-												
8		8.5		Gray coarse coal ash with trash; wood, ceramics, glass, leather, metal, brick												
	123-6 9'			-ASH AND REFUSE FILL-												
10		11.0	CL	Native clay deposits (See 107-4)												
	123-7 11'			-MARINE DEPOSIT-												
12		12.5		Bottom of Excavation at 12.5 ft.												

Obstructions:	Remarks:	Field Tests
		Dilatancy R - Rapid S - Slow N - None Toughness L - Low M - Medium H - High Plasticity N - Nonplastic L - Low M - Medium H - High Dry Strength N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit	Boulders	Test Pit Dimensions (ft)
at depth ft	Diameter (in.) Number Approx. Vol. (cu.ft)	Pit Depth 12.5
measured after hours elapsed	12" to 24" =	Pit Length x Width 4.0 x 14.0
	over 24" =	

NOTE: Soil Identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. B112

Project Union Branch Rail Line Property Portland, Maine
 Client Maine Department of Transportation
 Contractor Maine Test Borings, Inc.

File No. 80509-014
 Sheet No. 1 of 1
 Start 17 November 2000
 Finish 17 November 2000
 Driller D. McKeen
 H&A Rep. K. Stephenson

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Mobile B47 Bombardier
Inside Diameter (in.)	4.25	1 3/8	-	Bit Type:
Hammer Weight (lb.)		140	-	Drill Mud:
Hammer Fall (in.)		30	-	Casing:
				Hoist/Hammer: Winch/ Doughnut Hammer

Elevation
 Datum
 Location See Plan

Depth (ft.)	SPT*	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size**, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel					Sand			Field Test			
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
0	5	S1	0.0		0.6		Loose, black silty SAND, glass, roots, debris -DEBRIS FILL-					10	70	20					
	7	16"	2.0		1.8		Medium dense, brown to light brown SAND, little silt -GRANULAR FILL-			20	50	20	10						
	20	S2	2.0				Medium dense, gray-brown silty coarse to fine SAND, glass, trace clay (till fill)		5		10	65	20						
	13	12"	4.0				Medium dense, gray silty coarse to fine SAND (damp)		5		15	60	20						
	11					4.0		Very soft, fine sandy SILT with clay, trace gravel and coarse to medium sand		5	10	10	25	50					
	6							Similar to S3											
5	WOH	S3	4.0					Very loose, gray silty SAND, little gravel and clay			10	10	50	30					
	1	18"	6.0																
	2																		
	WOH	S4	6.0																
	1	12"	8.0																
	1																		
	WOH	S5	8.0																
	2	22"	10.0																
	1																		
10	1	S6	10.0		9.4		Very soft, black fine sandy SILT with coal fragments												
	1	24"	12.0		9.9	OL/	Very soft, dark gray organic SILT					10	90						
	2					OH	-HARBOR BOTTOM DEPOSIT-												
	2					CL	Soft, gray SILT to CLAY with sand, shells												
	2																		
					12.0		Bottom of Exploration at 12.0 ft. No refusal												
							No elevated PID readings detected during drilling and sampling procedures.												

Water Level Data

Sample Identification

Well Diagram

Summary

Date	Time	Elapsed Time (hr.)	Depth (ft.) to:			O Open End Rod	T Thin Wall Tube	U Undisturbed Sample	S Split Spoon	G Geoprobe		Summary
			Bottom of Casing	Bottom of Hole	Water							

Boring No. B112

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
 Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

*SPT = Sampler blows per 6 in. **Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil Identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

**2006 Master Planning
Test Boring Logs**

TEST BORING REPORT

Boring No. HA06-7

File No. 33538-000

Sheet No. 2 of 3

Depth (ft.)	SPT ¹	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size², structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel		Sand			Field Test						
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
25							FV2 (25.3 - 26.0 ft), Su = 840 psf / 270 psf												
30	WOR WOR WOH WOH	S6 24	30.0 32.0			CL	Medium stiff, lean CLAY (CL), mps 0.075 mm, wet, frequent black streaks -MARINE CLAY-						100						
35							FV3 (35.3 - 36.0 ft), Su = 590 psf / 110 psf												
40	WOR WOR WOR WOR	S7 24	40.0 42.0			CL	Medium stiff, lean CLAY (CL), mps 0.075 mm, wet, with frequent black streaks -MARINE CLAY-						100						
45							FV4 (40.3 - 41.0 ft), Su = 580 psf / 170 psf												
50	WOR WOR WOR WOR	S8 24	50.0 52.0			CL	Medium stiff, lean CLAY (CL), mps 0.075 mm, wet, with frequent black streaks -MARINE CLAY-						100						
55							FV5 (56.0 - 56.7 ft), Su = 860 psf												
60	WOR WOR WOR WOR	S9 24	60.0 62.0			CL	Medium stiff, lean CLAY (CL), mps 2.0 mm, wet, trace sand -MARINE CLAY-						100						

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¹SPT = Sampler blows per 6 in. ²Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. HA06-7

File No. 33538-000

Sheet No. 3 of 3

Depth (ft.)	SPT ¹	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size ² , structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel		Sand			Field Test					
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength	
65	11 32 20 20	S10 15	65.0 67.0		64.0	SM	Very dense, gray, silty SAND (SM), mps 0.75 in., bonded, no odor, wet -GLACIAL TILL-	20	10	10	45	15						
					67.0		-BOTTOM OF EXPLORATION-											
							NOTE: 1. FV1 (20.4 - 21.0 ft) indicates in-situ field vane performed at depth interval listed, corrected peak / residual shear strengths are provided. See Table II for details. 2. WOR = Weight of drill Rods; WOH = Weight of Hammer.											

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¹SPT = Sampler blows per 6 in. ²Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.



TEST BORING REPORT

Boring No. HA06-8

Project Proposed Bayside Parking Garage & Master Planning Portland, Maine
 Client Scott Simons Architects
 Contractor Maine Test Borings, Inc.

File No. 33538-000
 Sheet No. 1 of 2
 Start 10 August 2006
 Finish 10 August 2006

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	SS	-	Rig Make & Model: Mobile Drill / Truck
Inside Diameter (in.)	3.0	1.375	-	Bit Type: Roller Bit
Hammer Weight (lb.)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW Drive 25.0 ft
				Hoist/Hammer: Winch / Doughnut Hammer

Driller T. Schaefer
 H&A Rep. B. Steinert
 Elevation 12.0 +/-
 Datum Portland City
 Location See Plan

Depth (ft.)	SPT	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size², structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel					Sand					Field Test			
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0	15 28 32 23	S1 12	0.0 2.0	NO WELL INSTALLED		SP-SM	Very dense, dark brown to black, poorly graded SAND with gravel (SP-SM), mps 1 in., hydrocarbon odor, moist, coal and wood fragments present -FILL- NOTE: Similar material to above observed in auger cuttings from 0.0 to 5.0 ft	20	10	10	40	10	10								
5	52 52 42 28	S2 8	5.0 7.0				5.3	SW-SM SP	Very dense, dark brown to black, well graded SAND with silt (SW-SM), mps 4.75 mm, slight hydrocarbon odor, moist, trace coal and brick fragments -FILL- Medium dense to dense, yellow-brown, poorly graded SAND (SP), mps 2.0 mm, no odor, moist, wood stuck in tip of spoon -FILL-	0	0	10	50	30	10						
10	2 6 6 8	S3 12	10.0 12.0				10.5	SM SM	Very loose, yellow-brown to brown, silty SAND (SM), mps 4.75 mm, no odor, wet, trace wood fragments -FILL- Medium dense, dark brown to gray, silty SAND (SM), mps 4.75 mm, no odor, wet, some reworked natural material -FILL-	0	0	15	50	20	15						
15	4 7 8 11	S4 20	15.0 17.0				14.0	CL	Stiff, olive-gray, lean CLAY (CL), mps 0.075 mm, bonded, mottled, no odor, moist to wet -MARINE CLAY-							100					
20	WOH WOH 1 3	S5 24	20.0 22.0	17.0	CL	Very soft, gray, lean CLAY (CL), mps 1 in., bonded, no odor, wet, frequent black streaks -MARINE CLAY-							100								

Water Level Data				Sample Identification			Well Diagram			Summary											
Date	Time	Elapsed Time (hr.)	Depth (ft.) to:			O	T	U	S	G	Riser Pipe	Screen	Filter Sand	Cuttings	Grout	Concrete	Bentonite Seal	Overburden (lin. ft.)	Rock Cored (lin. ft.)	Samples	S10
			Bottom of Casing	Bottom of Hole	Water																
8/10/06	11:00	0	-	9.1	6.8																

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
 Toughness: L-Low, M-Medium, H-High Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High
¹SPT = Sampler blows per 6 in. ²Maximum particle size is determined by direct observation within the limitations of sampler size.

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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TEST BORING REPORT

Boring No. HA06-8

File No. 33538-000

Sheet No. 2 of 2

Depth (ft.)	SPT ¹	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description <small>(Density/consistency, color, GROUP NAME, max. particle size², structure, odor, moisture, optional descriptions, geologic interpretation)</small>	Gravel		Sand			Field Test				
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
25	WOR WOR WOR WOR	S6 24	25.0 27.0			CL	Very soft, gray, lean CLAY (CL), mps 0.42 mm, bonded, no odor, wet, frequent black streaks and fine sand partings, trace shells -MARINE CLAY-					10	90				
30	WOR WOR WOR WOR	S7 24	30.0 32.0		30.3	CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, trace shells, black streaks/specs become less frequent with depth -MARINE CLAY-						100				
40	WOR WOR WOR WOH	S8 24	40.0 42.0			CL	Very soft, gray, lean CLAY (CL), mps 0.075 mm, bonded, no odor, wet, trace fine sand -MARINE CLAY-						100				
50	3 18 26 22	S9 12	50.0 52.0		50.2	SW-SM	Dense, gray, well graded SAND with silt (SW-SM), mps 4.75 mm, bonded, no odor, wet -GLACIAL TILL-	0	0	30	40	20	10				
	38 40 52 55	S10 12	52.0 54.0		51.8	BR	-WEATHERED BEDROCK-										
					54.0		-BOTTOM OF EXPLORATION-										

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¹SPT = Sampler blows per 6 in. ²Maximum particle size is determined by direct observation within the limitations of sampler size.
NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

APPENDIX B

Recent Subsurface Explorations

TEST BORING REPORT

Boring No. HA08-1

Project Maine Health/United Way Development, Portland, Maine
 Client Maine Medical Center
 Contractor Maine Test Borings, Inc.

File No. 35611-000
 Sheet No. 1 of 4
 Start 8 August 2008
 Finish 12 August 2008
 Driller M. Porter
 H&A Rep. O. Lawlor

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 102.0 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

Elevation 11.5 +/-
 Datum Portland City Datum
 Location See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel			Sand			Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
0				0.1		-Bituminous Concrete-													
20	20	S1	1.0		GW	Very dense, gray, well-graded GRAVEL (GW), mps 1-3/8 in., no structure, no odor, wet, intermixed with 15% concrete	35	35	10	10	10								
50	50	16	3.0			-FILL-													
23	23																		
26	26																		
5	5	S2	3.0	3.0	SM	Very dense, dark gray, silty SAND (SM), mps 1-3/8 in., no structure, no odor, moist, intermixed with 10% concrete and ash	5	5	30	30	15	15							
8	8	19	4.5			-FILL-													
100	100																		
5	18	S3	5.0	5.0	SM	Medium dense, dark gray, silty SAND (SM), mps 1-3/8 in., no structure, no odor, moist	5	5	30	30	15	15							
13	13	22	7.0			-FILL-													
8	8																		
6	6																		
7	7	S4	7.0	7.0	SM	Loose, dark gray, silty SAND (SM), mps 1-3/8 in., no structure, no odor, wet	5	5	30	30	15	15							
4	4	11	9.0			-FILL-													
2	2																		
2	2																		
10	2	S5	10.0	9.0	OL/OH	Loose, gray, sandy ORGANIC SILT (OL/OH), trace shells, mps 2.0 mm, no structure, organic odor, wet					15	85							
1	1	7	12.0			-HARBOR BOTTOM DEPOSIT-													
3	3																		
3	3																		
28	28	S6	12.0	12.0	OL/OH	Medium dense, gray, sandy ORGANIC SILT (OL/OH), trace shells, mps 2.0 mm, no structure, petroleum-like odor, wet, frequent sand partings					15	85							
12	12	9	14.0																
11	11																		
10	10																		
15	7	S7	15.0	14.5	CL	Very stiff, olive-gray, silty lean CLAY (CL), mps 2.0 mm, brown mottling, no structure, no odor, moist							100	N	L	L			
11	11	24	17.0			-GLACIOMARINE DEPOSIT-													
18	18																		
21	21																		

Water Level Data					Sample ID		Well Diagram		Summary		
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Split Spoon Sample	Overburden (ft)	Rock Cored (ft)
			Bottom of Casing	Bottom of Hole	Water						
8/12/08	1148		99.0	101.7	19.1					98.5	0
8/12/08	1230		-	76.0	7.1					18S	

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**
Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HA-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08-GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

TEST BORING REPORT

Boring No. HA08-1

File No. 35611-000
Sheet No. 2 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test							
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
20																			
25	WOH WOH WOH WOH	S8 24	25.0 27.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (25.3-26.0 ft), Su = 900/250 psf -GLACIOMARINE DEPOSIT-						100	N	L	L				
35	WOR WOR WOH WOH	S9 21	35.0 37.0		CL	Medium stiff, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV2 (35.3-36.0 ft), Su = 650/330 psf -GLACIOMARINE DEPOSIT-						100	N	L	L				
45	WOR WOR WOR WOR	S10 24	45.0 47.0		CL	Very soft, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV3 (45.3-46.0 ft), Su = 204/120 psf -GLACIOMARINE DEPOSIT-						100	N	L	L				

HA-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-1

TEST BORING REPORT

Boring No. HA08-1

File No. 35611-000
Sheet No. 3 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
50						Note: Trace of sand and gravel observed in wash water.												
	WOR WOR WOR WOR	NR	56.0 58.0			Note: No recovery, probable gravel or cobble pushed by spoon tip. FV4 (56.3-57.0 ft), Su = 1220/530 psf												
60	WOR WOR WOR WOR	S11 24	60.0 62.0		CL	Very soft, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet, frequent fine sand seams -GLACIOMARINE DEPOSIT-				5	95	N	L	L				
65	5 1 3 10	S12 14	65.0 67.0	65.0	SC/SM	Very loose, gray, clayey SAND to silty SAND (SC/SM), mps 0.25 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5	15	20	45	15							
70	23 24 31 43	S13 24	70.0 72.0	69.0	SM	Very dense, gray, silty SAND with gravel (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	10	20	25	30	15							
75	44 76 81 100/4"	S14 15	75.0 77.0		SM	Very dense, gray, silty SAND with gravel (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	5	5	20	25	30	15						

H-A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08-GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil Identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-1

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
80	50 44 56 65	S15 19	80.0 82.0		SM	Very dense, gray, silty SAND (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	5	5	20	25	30	15				
85	57 87 102 90	S16 18	85.0 87.0		SM	Very dense, gray, silty SAND (SM), mps 0.25 in., bonded, no odor, moist -GLACIAL TILL-	5	5	20	25	30	15				
90	8 21 62 87	S17 18	90.0 92.0		SM	Very dense, gray, silty SAND (SM), mps 0.25 in., bonded, no odor, moist, occasional pockets of sandy SILT -GLACIAL TILL-	5	5	20	25	30	15				
98.5																
100	34 48 71 146	S18 14	100.0 102.0		BR	Highly weathered SCHIST -WEATHERED BEDROCK- Note: Unable to advance core barrel through casing at 90.0 ft, casing deflected from 90.0 to 100.0 ft.										
				102.0		BOTTOM OF EXPLORATION Notes: 1. FV1 (25.3-26.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										

HA-TB-TEST BORING-07-1 HA-LIB07-1R-FOR-06-03-08-GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

TEST BORING REPORT

Boring No. HA08-2

File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
20						Note: Advanced NW casing to 25.0 ft and wash out with roller bit. Bottom 10.0 ft of casing spun off and could not be retrieved. Relocated boring approximately 5 ft west and resumed sampling at 25.0 ft.												
25	WOH WOH WOH	S7 24	25.0 27.0		CL	Very soft, dark gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV1 (25.3-26.0 ft), Su = 610/200 psf -GLACIOMARINE DEPOSIT-						100	N	L	L			
35	WOR WOH WOH	S8 4	35.0 37.0		CL	Medium stiff, gray, lean CLAY (CL), trace gravel, mps 1.0 in., no structure, no odor, wet FV2 (35.3-36.0 ft), Su = 410/120 psf -GLACIOMARINE DEPOSIT-						100	N	L	L			
45	WOR WOH WOH	S9 24	45.0 47.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV3 (45.3-46.0 ft), Su = 570/160 psf -GLACIOMARINE DEPOSIT-						100	N	L	L			

HA-TEST BORING-07-1 HA-LB07-1R-FOR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test							
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
50																			
55	WOR WOR WOR	NR	55.0 57.0			Note: No recovery, gravel in spoon tip. FV4 (55.3-56.0 ft), Su = 490/120 psf -GLACIOMARINE DEPOSIT-													
60					61.0	Note: Drill action indicates stratum change at 61.0 ft. Gravel in drill wash water.													
65	11 16 16 48/3"	S10 17	65.0 67.0		SM	Dense, olive-gray, silty SAND (SM), mps 4.0 mm, bonded, no odor, moist -GLACIAL TILL-			30	30	25	15							
					66.6	Note: Recovery from 66.6 to 67.0 ft consists of SCHIST. -WEATHERED BEDROCK-													
					68.7	Note: Roller cone refusal. BOTTOM OF EXPLORATION													
						Notes: 1. FV1 (25.3-26.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.													

H-A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

TEST BORING REPORT

Boring No. HA08-3

Project **Maine Health/United Way Development, Portland, Maine**
 Client **Maine Medical Center**
 Contractor **Maine Test Borings, Inc.**

File No. **35611-000**
 Sheet No. **1 of 2**
 Start **24 July 2008**
 Finish **24 July 2008**
 Driller **M. Porter**
 H&A Rep. **O. Lawlor**

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 18.0 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

Elevation **11 +/-**
 Datum **Portland City Datum**
 Location **See Plan**

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel					Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
0						-Bituminous Concrete-													
1.0	32	S1	1.0		GW	Medium dense, gray, well-graded gravel with sand (GW), intermixed with 30% concrete fragments, no structure, no odor, moist	40	30	15	10	5								
2.0	17	S19	3.0		SM	Medium dense, gray, silty SAND (SM), mps 0.25 mm, no structure, no odor, moist			30	30	25	15							
3.0	10				SM	Medium dense, gray, silty SAND (SM), intermixed with 15% ash and cinders, mps 0.25 in, no structure, no odor, moist			30	20	25	15							
5.0	7					-FILL-													
5	5	S2	3.0		SW	Medium dense, red-brown, well-graded SAND (SW), mps 0.5 in., no structure, no odor, moist, sample composed entirely of cinder and ash, trace brick and coal			30	40	30								
7.0	12	S20	5.0			-FILL-													
7.0	11				GP	Medium dense, dark brown, poorly-graded GRAVEL (GP), mps 1-3/8 in., trace cinder, glass and wood fragments	40	35	10	5	5	5							
9.0	8	S4	7.0			-FILL-													
10	6																		
10	3																		
10.0	1	S5	10.0		SM	Very loose, gray, silty SAND (SM), intermixed with 15% cinders and ash, mps 0.5 in., no structure, no odor, wet, organic silt in tip of spoon			30	30	25	15							
12.0	1	S6	12.0		ML	Medium stiff, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist					10	90							
14.0	3					-HARBOR BOTTOM DEPOSIT-													
14.0	3				ML	Very soft, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist					10	90							
15	2																		
15	2	WOH	14.0																
16.0	1	S7	16.0		ML	Very soft, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist					10	90							
16.0	2																		
16.1	5	S8	16.0		ML	Very soft, gray, SILT with sand (ML), mps 2.0 mm, some shell fragments, trace organic matter, no structure, hydrogen sulfide odor, moist					10	90							
18.0	7		18.0		CL	Medium stiff, gray with occasional mottled brown, lean CLAY (CL), mps 2.0 mm, occasional fine sand pockets, trace root fibers, no odor, moist					5	95							
						-GLACIOMARINE DEPOSIT-													
						BOTTOM OF EXPLORATION													

Notes:
 1. WOH = Weight of Hammer.

Water Level Data						Sample ID		Well Diagram			Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	Riser Pipe	Screen	Filter Sand	Overburden (ft)	Rock Cored (ft)
			Bottom of Casing	Bottom of Hole	Water							
7/24/08		0.25	16.0	18.0	4.0	U - Undisturbed Sample					18.0	0
7/24/08		0.5	-	18.0	7.5	S - Split Spoon Sample						8S

Boring No. HA08-3

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High
 *Note: Maximum particle size is determined by direct observation within the limitations of sampler size.
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. HA08-4

Project Maine Health/United Way Development, Portland, Maine
 Client Maine Medical Center
 Contractor Maine Test Borings, Inc.

File No. 35611-000
 Sheet No. 1 of 3
 Start 4 August 2008
 Finish 4 August 2008
 Driller M. Porter
 H&A Rep. O. Lawlor

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	4.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: Bentonite
Hammer Fall (in.)	30	30	-	Casing: HW Drive to 64.4 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

Elevation 12 +/-
 Datum Portland City Datum
 Location See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel					Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
0						-Bituminous Concrete-													
15	15	S1	0.5	0.5	SP-SM	Dense, dark brown, poorly-graded SAND with silt (SP-SM), trace gravel, mps 1-3/8 in., intermixed with 5% cinder, ash, no structure, no odor, moist -FILL-	5		30	40	15	10							
17	17	23	2.5																
14	14																		
11	11																		
14	14	S2	2.5	2.5	SP-SM	Medium dense, dark brown, poorly-graded SAND with silt (SP-SM), trace gravel, mps 1-3/8 in., intermixed with 5% cinder, ash, no structure, no odor, moist	5		30	40	15	10							
12	12	7	4.5																
12	12																		
25	25																		
5	8	S3	5.0	5.0	SM	Medium dense, brown, silty SAND (SM), mps 0.5 in., intermixed with 20% cinder and ash, no structure, no odor, moist -FILL-			30	30	20	20							
10	10	24	7.0																
7	7																		
8	8																		
8	8	S4	7.0	7.0	SP-SM	Loose, dark brown, poorly-graded SAND with silt (SP-SM), mps 0.25 in., trace wood, no structure, no odor, moist			35	40	15	10							
5	5	4	9.0																
3	3																		
3	3																		
2	2	S5	9.0	9.0	SP-SM	Loose, dark brown, poorly-graded SAND with silt (SP-SM), mps 0.25 in., trace wood, trace shells and glass, no structure, no odor, wet			35	40	15	10							
4	4	6	11.0																
4	4																		
6	6																		
11.0	2	S6	11.0	11.0	SM	Loose, gray, silty SAND (SM), trace gravel and roots, mps 0.25 in., no structure, no odor, wet	5	15	30	30	20								
13.0	3	12	13.0																
4	4																		
3	3																		
3	3																		
13.0	WOH	S7	13.0	13.0	ML	Soft, gray, sandy SILT (ML), trace fine gravel, mps 0.25 mm, trace shells, no structure, no odor, wet -HARBOR BOTTOM DEPOSIT-	5		15	30	50								
15	1	21	15.0																
3	3																		
3	3																		
15	4	S8	15.0	15.0	ML	Very stiff, gray, sandy SILT (ML), trace fine gravel, mps 0.25 mm, trace shells, no structure, no odor, wet, clay in tip of spoon	5	10	15	20	50								
12	12	5	17.0																
12	12																		
15	15																		
16.9	4	S9	17.0	16.9	CL	Very stiff, gray, silty lean CLAY (CL), mps 2.0 mm., occasional brown mottling, no structure, no odor, moist -GLACIOMARINE DEPOSIT-					100	N	L	L					
6	6	24	19.0																
10	10																		
14	14																		

Water Level Data				Sample ID			Well Diagram				Summary									
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	U - Undisturbed Sample	S - Split Spoon Sample	Riser Pipe	Screen	Filter Sand	Cuttings	Grout	Concrete	Bentonite Seal	Overburden (ft)	Rock Cored (ft)	Samples	Boring No.
			Bottom of Casing	Bottom of Hole	Water															

Field Tests: Dilatancy: R - Rapid S - Slow N - None
 Toughness: L - Low M - Medium H - High
 Plasticity: N - Nonplastic L - Low M - Medium H - High
 Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**
Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HA-TEST BORING-07-1 HALIBOT-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test			
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity
20	1	S10 24	20.0		CL	Medium stiff, gray, silty lean CLAY (CL), mps 2.0 mm, occasional brown mottling, no structure, no odor, moist						100	N	L	L
	3		22.0												
	1	S11 12	22.0		CL	Stiff, gray, silty lean CLAY (CL), mps 2.0 mm, occasional brown mottling, no structure, no odor, moist FV1 (22.3-23.0 ft), Su = 1,045 psf -GLACIOMARINE DEPOSIT-						100	N	L	L
	3		24.0												
25	P	U1 23	25.0			FV2 (27.3-28.0 ft), Su = 590/160 psf									
	U		27.0												
30	WOR	S12 22	30.0		CL	Medium stiff, dark gray, lean CLAY (CL), trace fine sand and gravel from 31.7 to 32.0 ft., no structure, no odor, wet FV3 (30.3-31.0 ft), Su = 500/90 psf				5	95	N	L	L	
	WOR		32.0												
	P	U2 23	33.0			FV4 (35.3-36.0 ft), Su = 340/65 psf -GLACIOMARINE DEPOSIT-									
	U		35.0												
40	WOR	S13 22	40.0		CL	Soft, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet Su = 400/120 psf FV5 (40.3-41.0 ft), Su = 400/120 psf						100	N	L	L
	WOR		42.0												
45	WOR	S14 24	45.0		CL	Soft, gray, lean CLAY (CL), trace gravel, mps 2.0 mm, no structure, no odor, wet FV6 (45.3-46.0 ft), Su = 420/110 psf -GLACIOMARINE DEPOSIT-						100	N	L	L
	WOR		47.0												

HA-TEST BORING-07-1 HA-LIB07-1R-POR-06-08-GLB HA-TB-CORE+WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. HA08-4

File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
50	WOR WOR WOR WOR	S15 24	50.0 52.0		CL	Medium stiff, gray, lean CLAY (CL), trace gravel, mps 2.0 mm, no structure, no odor, wet FV7 (50.3-51.0 ft), Su = 610/80 psf						100	N	L	L	
55	WOR 3 3 6	S16 24	55.0 57.0	55.4	SC	Loose, gray, clayey SAND (SC), mps 4.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-				75	25					
60	13 17 24 34	S17 24	60.0 62.0	58.8	SM	Dense, gray, silty SAND (SM), trace gravel, mps 1-3/8 in., bonded, no odor, moist -GLACIAL TILL-	5	20	30	30	15					
				64.4		Note: Drill action indicates probable bedrock at 64.4 ft. -WEATHERED BEDROCK-										
65				66.0		Note: Roller bit refusal at 66.0 ft. BOTTOM OF EXPLORATION										
						Notes: 1. FV1 (22.3-23.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										

HA-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08 GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-4

TEST BORING REPORT

Boring No. HA08-5(OW)

File No. 35611-000
Sheet No. 2 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test						
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
20							FV1 (20.3-21.0 ft), Su = 720/260 psf												
25	WOR WOR WOH WOH	S9 24	25.0 27.0			CL	Medium stiff, gray to black, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV2 (25.3-26.0 ft), Su = 720/200 psf						100	N	M	M			
30							FV3 (30.3-31.0 ft), Su = 730/170 psf -GLACIOMARINE DEPOSIT-												
35	WOR WOR WOR WOR	S10 21	35.0 37.0			CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV4 (35.3-36.0 ft), Su = 600/290 psf						100	N	L	L			
40	WOR WOR WOR	S11 24	40.0 42.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet FV5 (40.3-41.0 ft), Su = 600/190 psf -GLACIOMARINE DEPOSIT-						100	N	L	L				
45																			

H-A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08-GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-5(OW)

TEST BORING REPORT

Boring No. HA08-5(OW)

File No. 35611-000
Sheet No. 3 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
50	WOR WOR WOR WOR	S12 24	50.0 52.0		53.0	CL	Medium stiff, gray, lean CLAY (CL), fine sand in spoon tip, mps 2.0 mm, no structure, no odor, wet FV6 (50.3-51.0 ft), Su = 700/370 psf -GLACIOMARINE DEPOSIT- Note: Sand and fine gravel observed in wash water.					5	95	N	L	L	
55									-PROBABLE GLACIAL TILL-								
60	16 9 7 10	NR	60.0 62.0		62.5		Note: Casing refusal at 62.5 ft. Advanced roller bit to 63.8 ft. Begin NQ Rock Core at 63.8 ft. See Core Boring Report for Details. Notes: 1. FV1 (20.3-21.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										
65	36 50/1"	S13 5	63.2 63.7														

H:A-TEST BORING-07-1 HA-LIB07-1R-POR-06-08-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000\TB.GPJ 10 Sep 08

NOTE: Soil Identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-5(OW)

Depth (ft)	Drilling Rate (min./ft)	Run No.	Run Depth (ft)	Recovery/RQD		Weathering	Elev./Depth (ft)	Visual Description and Remarks	
				in.	%				
								<i>SEE TEST BORING REPORT FOR OVERBURDEN DETAILS</i>	
65	6	C1	63.8	19	99		65.4	Moderately hard, moderate to highly weathered, dark green aphanitic CHLORITE SCHIST. Foliation is extremely thin, vertical. Primary joint set is parallel to foliation, vertical, extremely close, smooth, stepped, fresh to discolored with pyrite, open. Note: RQD affected by extremely close fractures and drill action.	
	7		65.4	0	0				
	6	C2	65.4	36	88	68.8		Moderately hard, moderate to highly weathered, dark green aphanitic CHLORITE SCHIST. Occasional, very thin, high angle to vertical quartz veins. Primary joint set is parallel to foliation, vertical, extremely close, smooth, stepped, fresh to discolored with pyrite, open.	
	6		68.8	12	29				
	7								
								68.8	BOTTOM OF EXPLORATION
70									Note: Observation Well installed in completed borehole. See installation report for details.
75									
80									
85									
90									

H-A-CORE-WELL07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

Project Maine Health/United Way Development, Portland, Maine
 Client Maine Medical Center
 Contractor Maine Test Borings, Inc.

File No. 35611-000
 Sheet No. 1 of 1
 Start 23 July 2008
 Finish 24 July 2008
 Driller M. Porter
 H&A Rep. O. Lawlor

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 12.0 ft. Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (fn.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel					Sand			Field Test			
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
0	2	S1	0.0		SM	Medium dense, brown, silty SAND (SM), mps 1.0 in., no structure, no odor, moist		5	30	30	20	15						
	5	22	2.0			-FILL-												
	13	S2	2.0		SM	Dense, gray to brown, silty SAND (SM), mps 1.0 in. trace brick fragments, cinders, wood, no structure, cinder odor, moist		5	30	30	20	15						
	17	21	4.0															
	18																	
	5	S3	4.0		SM	Medium dense, gray to brown, silty SAND (SM), mps 1.0 in. trace brick fragments, cinders, wood, no structure, cinder odor, moist		5	30	30	20	15						
	6	20	6.0															
	9			5.0	SW	Medium dense, light brown, well-graded SAND (SW), occasional silt pockets, mps 0.5 in., no structure, no odor, moist		5	30	35	30							
	10				SW	Very loose, brown, well-graded SAND (SW), occasional pockets of dark gray sandy silt, mps 0.25 in., no structure, no odor, moist		5	30	35	30							
	6	S4	6.0															
	2	16	8.0															
	2																	
	3	S5	8.0		SM	Loose, dark brown, silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet		5	5	20	25	20						
	4	8	10.0			-FILL-												
	3																	
	4																	
	10	S6	10.0		SM	Medium dense, dark brown, silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet, trace brick and shell fragments		5	5	20	25	20						
	4	2	12.0															
	7																	
	5																	
	4	S7	12.0		SM	Loose, dark brown, silty SAND with gravel (SM), mps 1.0 in., no structure, no odor, wet, trace brick and shell fragments		5	5	20	25	20						
	2	14	14.0		ML	Soft, gray, sandy SILT (ML), little shell fragments, trace clay, frequent partings along fine sand seams, no odor, moist					5	95						
	2																	
	5																	
				14.0		-HARBOR BOTTOM DEPOSIT- BOTTOM OF EXPLORATION												

HA-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

Water Level Data				Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:	O - Open End Rod	U - Undisturbed Sample		Riser Pipe	Overburden (ft)	14.0
			Bottom of Casing	T - Thin Wall Tube	S - Split Spoon Sample		Screen	Rock Cored (ft)	0
			Bottom of Hole				Filter Sand	Samples	7S
N/A			Water				Cuttings	Boring No. HA08-6	
							Grout		
							Concrete		
							Bentonite Seal		

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High
 *Note: Maximum particle size is determined by direct observation within the limitations of sampler size.
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. HA08-7(OW)

File No. 35611-000
Sheet No. 2 of 4

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
20	WOR WOH WOH WOH	S9 24	20.0 22.0			CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (20.3-21.0 ft), Su = 830/320 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
25							FV2 (25.3-26.0 ft), Su = 730/170 psf										
30	WOH WOH WOR	S10 24	30.0 32.0			CL	Medium stiff, gray, lean CLAY (CL), occasional partings along fine sand seams, no odor, moist FV3 (30.3-31.0 ft), Su = 680/280 psf -GLACIOMARINE DEPOSIT-						100	N	L	L	
35							FV4 (35.3-36.0 ft), Su = 870/210 psf										
38.0																	
40	5 5 9 19	S11 2	40.0 42.0			SM	Medium dense, gray, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet -GLACIAL TILL-	5		15	30	30	20				
45	12 8 9 10	S12 21	45.0 47.0			SM	Medium dense, gray, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet -GLACIAL TILL-	5	5	15	25	30	20				

HA-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-7(OW)

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
50	8 6 9 16	S13 22	50.5 52.5				Note: Drilled through cobble from 50.1 to 50.5 ft. Medium dense, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet -GLACIAL TILL-	5	5	30	25	20	15				
60	40 75 125 50/1"	S14 12	60.0 61.6		60.1 61.6		Very dense, silty SAND with gravel (SM), mps 1-3/8 in., well bonded, no odor, wet, 1/2 to 1-3/8 in. fragments of weathered CHLORITE SCHIST -WEATHERED BEDROCK-	5	5	15	25	35	15				
65							Note: Bedrock encountered at 61.6 ft. Advanced roller bit to 62.0 ft. Begin NQ rock core at 62.0 ft. See Core Boring Report for details. Notes: 1. FV1 (20.3-21.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										
70																	

HA-TEST BORING-07-1 HA-LIB07-1R-FOR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-7(OW)

Depth (ft)	Drilling Rate (min./ft)	Run No.	Run Depth (ft)	Recovery/RQD		Weathering	Elev./Depth (ft)	Visual Description and Remarks
				in.	%			
<i>SEE TEST BORING REPORT FOR OVERBURDEN DETAILS</i>								
65	2	C1	62.0	36	60		67.0	Moderately hard, moderate to highly weathered, dark gray, aphanitic SILTSTONE. Foliation is extremely thin, high angle to vertical. Primary joint set is parallel to foliation, high angle to vertical, close to extremely close, rough, stepped to undulating, fresh to discolored with pyrite, tight.
	2		67.0	6	10			
	2							
	2							
	2							
	2	C2	67.0	24	40		67.0	Note: Recovery consists of 1.0 to 3.0 in. pieces and fragments of hard, dark gray, slightly weathered, aphanitic SILTSTONE, due to extremely close fracture spacings and drill action.
	2		72.0	0	0			
	3							
70	3							
	3							
	2					72.0	<p style="text-align: center;">BOTTOM OF EXPLORATION</p> <p>Note: Observation well installed in completed borehole. See installation report for details.</p>	
75								
80								
85								
90								

HA-CORE-WELL07-1 HA-LIB07-1R-POR-06-08-GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

TEST BORING REPORT

Boring No. HA08-8

Project **Maine Health/United Way Development, Portland, Maine**
 Client **Maine Medical Center**
 Contractor **Maine Test Borings, Inc.**

File No. **35611-000**
 Sheet No. **1 of 3**
 Start **6 August 2008**
 Finish **7 August 2008**
 Driller **M. Porter**

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	4.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: Bentonite
Hammer Fall (in.)	30	30	-	Casing: HW Drive to 50.5 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

H&A Rep. **O. Lawlor**
 Elevation **9 +/-**
 Datum **Portland City Datum**
 Location **See Plan**

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
0	2	S1	0.0	0.2	SW	-TOPSOIL-	5	5	30	40	20							
10	13	5	2.0			Medium dense, light brown, well-graded SAND with gravel (SW), mps 0.25 in., no structure, no odor, moist												
11	14	S2	2.0	2.0	SM	Dense, gray-green, silty SAND with gravel (SM), mps 1 3/8 in., no structure, no odor, moist, reworked till	5	5	25	25	25	15						
14	26	16	4.0			-FILL-												
15	29					NOTE: Augered through cobble from 4.0 - 4.7 ft.												
5	1	S3	5.0		SM	Very loose, gray-green, silty SAND with gravel (SM), mps 1 3/8 in., no structure, no odor, moist, reworked till	5	5	25	25	25	15						
6	1	20	7.0			-FILL-												
7	3																	
2	2	S4	7.0		SM	Loose, gray-green, silty SAND with gravel (SM), mps 1 3/8 in., no structure, no odor, moist, reworked till	5	5	25	25	25	15						
4	4	19	9.0			-FILL-												
3	1	S5	9.0	9.5	OL/OH	Very soft, dark gray, ORGANIC SILT (OL/OH), trace sand, glass and shell fragments, mps 4.0 mm, no structure, no odor, wet					5	95						
10	1	13	11.0			-HARBOR BOTTOM DEPOSIT-												
6	13	S6	12.0		OL/OH	Medium dense, dark gray, ORGANIC SILT (OL/OH), trace sand, glass and shell fragments, mps 4.0 mm, no structure, no odor, wet					5	95						
4	4		14.0															
6																		
2	3	S7	14.0	13.8	CL	Medium stiff, olive-gray, silty lean CLAY (CL), trace gravel, occasional brown mottles, mps 0.25 in., no structure, no odor, moist		5				95	N	L	L			
15	4	24	16.0			-GLACIOMARINE DEPOSIT-												
4	7																	
WOR		S8	16.0		CL	Soft, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet						100	N	L	L			
WOH		24	18.0			FV1 (18.3-19.0 ft), Su = 460/70 psf												
WOH						-GLACIOMARINE DEPOSIT-												
WOH																		

Water Level Data					Sample ID		Well Diagram		Summary						
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	Filter Sand	Cuttings	Grout	Concrete	Bentonite Seal	Overburden (ft)	Rock Cored (ft)	Samples
			Bottom of Casing	Bottom of Hole	Water										
8/7/08			-	50.5	9.0								50.5	0	13S, 2U

Boring No. HA08-8

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High
 *Note: Maximum particle size is determined by direct observation within the limitations of sampler size.
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000.TB.GPJ 10 Sep 08

TEST BORING REPORT

Boring No. HA08-8

File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test							
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
20	P U S H	U1 18	20.0 22.0			FV2 (22.3-23.0 ft), Su = 610/50 psf													
25	WOR WOH WOH WOH	S9 24	25.0 27.0		CL	Very soft, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-						100							
30	WOR WOR 1 WOH	S10 24	30.0 32.0		CL	Soft, gray, lean CLAY (CL), mps 2.0 mm FV3 (30.3-31.0 ft), Su = 380/120 psf -GLACIOMARINE DEPOSIT-						100	N	L	L				
35	WOR WOR WOR WOR	S11 24	35.0 37.0		CL	Medium stiff, gray, lean CLAY (CL), mps 2.0 mm FV4 (35.3-36.0 ft), Su = 780/150 psf -GLACIOMARINE DEPOSIT-						100	N	L	L				
40						FV5 (39.3-40.0 ft), Su = 1,030/80 psf													
	P U S H	U2 24	41.0 43.0																
	2 6 6 7	S12 18	43.0 45.0	43.0	SP	Medium dense, gray, poorly-graded SAND (SP), trace gravel, mps 0.5 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5		20	30	45								
45						Note: Casing refusal on probable bedrock at 48.6 ft.													
				48.6		-WEATHERED BEDROCK-													

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08-GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-8

TEST BORING REPORT

Boring No. HA08-8

File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength		
50	00/1"	S13 4	50.2 50.5	50.5		Weathered Rock fragments -WEATHERED BEDROCK- Note: Split spoon refusal BOTTOM OF EXPLORATION Notes: 1. FV1 (22.3-23.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.												

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08 GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-8

Project Maine Health/United Way Development, Portland, Maine
 Client Maine Medical Center
 Contractor Maine Test Borings, Inc.

File No. 35611-000
 Sheet No. 1 of 1
 Start 24 July 2008
 Finish 24 July 2008
 Driller M. Porter
 H&A Rep. O. Lawlor

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 16.0 ft. Hoist/Hammer: Winch Doughnut Hammer PID Make & Model:

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel					Sand					Field Test			
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength				
0	2	S1	0.0		GM	Loose, gray-brown, silty GRAVEL with sand (GM), mps 0.5 in., no structure, organic odor, wet	15	45	10	10	5	15								
	3	3	2.0			-FILL-														
	4	S2	2.0	2.0		Note: Sample composed of cinder and ash from 2.0 to 3.0 ft.														
	6	22	4.0																	
	9			3.0	SM	Medium dense, gray, silty SAND (SM), trace gravel, mps 0.25 in., no structure, no odor		5	30	30	20	15								
	11				SM	Loose, gray, silty SAND (SM), mps 0.25 in., no structure, no odor, moist			10	30	30	30								
	1	S3	4.0			-FILL-														
	3	22	6.0																	
	3				SM	Loose, gray, silty SAND (SM) with gravel, mps 0.25 in., no structure, no odor, moist	5	5	15	30	15	30								
	3					Note: Groundwater encountered at 7.1 ft.														
	1	S4	6.0																	
	2	16	8.0																	
	3																			
	3																			
	WOH	S5	8.0																	
	3	10	10.0			Loose, gray, silty SAND (SM) with gravel, mps 0.25 in., no structure, no odor, moist	5	5	15	30	15	30								
	6					-FILL-														
	11																			
	4	S6	10.0																	
	5	8	12.0			Loose, gray, silty SAND (SM) with gravel, mps 0.25 in., no structure, no odor, moist, trace wood and glass fragments	5	5	20	30	25	15								
	3																			
	2																			
	2	S7	12.0																	
	3	2	14.0			Medium stiff, dark gray, SILT (ML), trace wood, mps 2.0 mm, no structure, organic odor, wet					5	95								
	4					-HARBOR BOTTOM DEPOSIT-														
	5																			
	5	S8	14.0																	
	4	20	16.0			Stiff, gray, lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist							100							
	6					-GLACIOMARINE DEPOSIT-														
	5																			
						BOTTOM OF EXPLORATION														
						Note: 1. WOH = Weight of Hammer.														

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000.TB.GPJ 10 Sep 08

Water Level Data						Sample ID		Well Diagram				Summary		
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	T - Thin Wall Tube	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (ft)	Rock Cored (ft)	Samples	8S	Boring No.	HA08-9
			Bottom of Casing	Bottom of Hole	Water									
7/24/08	1315	0.25	14.0	16.0	3.7									

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High
 *Note: Maximum particle size is determined by direct observation within the limitations of sampler size.
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

TEST BORING REPORT

Boring No. HA08-10

File No. 35611-000
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand				Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
20	WOH WOH					FV1 (19.3-20.0 ft), Su = 520/110 psf -GLACIOMARINE DEPOSIT- FV2 (23.3-24.0 ft), Su = 730/130 psf Note: Wood fibers observed in wash water from 24.5 to 25.0 ft.													
25	P U S H	U1 22	25.0 27.0			FV3 (27.3-28.0 ft), Su = 400/90 psf													
30	WOR WOR WOR	S9 24	30.0 32.0		CL	Very soft, gray, lean CLAY (CL), mps 2.0 mm, occasional fine sand partings, no odor, wet FV4 (30.0-31.0 ft), Su = 220/70 psf -GLACIOMARINE DEPOSIT-					5	95	N	L	L				
35	WOR WOR 3 2	S10 24	35.0 37.0	35.2	CL SM	Very soft, gray, lean CLAY (CL), mps 2.0 mm, occasional fine sand partings, no odor, wet ----- Loose, gray, silty SAND (SM), mps 4.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-			5	10	5	70	95	N	L	L			
40	5 2 7 7	S11 6	40.5 42.5		SW- SM	Loose, gray, well graded SAND with silt (SW-SM), mps 0.25 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5	5	25	25	30	10							
45	9 9 5 6	S12 6	45.5 47.5	45.5	SP- SM	Medium dense, gray, poorly graded SAND with silt (SP-SM), mps 0.25 in., no structure, no odor, wet, schist fragment in tip of spoon -GLACIAL TILL-	5	5	5	25	50	10							
				47.5	BR	-WEATHERED BEDROCK-													
				49.5															

HA-TEST BORING-07-1 HA-LB07-1R-FOR-06-03-08-GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-10

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test					
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength	
						<p>Note: Roller cone refusal.</p> <p style="text-align: center;">BOTTOM OF EXPLORATION</p> <p>Notes: 1. FV1 (19.3-20.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.</p>											

H-A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-10

TEST BORING REPORT

Boring No. HA08-11
 File No. 35611-000
 Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand				Field Test						
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength			
20																			
25	WOR WOH WOH WOH	S9 24	25.0 27.0		CL	Medium stiff, gray, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (25.3-26.0 ft), Su = 720/170 psf -GLACIOMARINE DEPOSIT-						100	N	L	N				
30																			
34.0				34.0		Note: Drill action indicates probable gravel from 34.0 to 35.0 ft. Fine gravel observed in wash water.													
35	2 3 2 2	S10 19	35.0 37.0		SP-SM	Loose, gray, poorly-graded SAND with silt (SP-SM), trace gravel, mps 0.25 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5		5	80	10								
40	8 11 10 19	S11 4	40.0 42.0		SP-SM	Medium dense, gray, poorly-graded SAND with silt (SP-SM), trace gravel, mps 1-3/8 in., no structure, no odor, wet -GLACIOMARINE DEPOSIT-	5		5	80	10								
45																			

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08-GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-11

TEST BORING REPORT

Boring No. HA08-11

File No. 35611-000
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION <small>(Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)</small>	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
50	10 12 19 13	S12 9	50.0 52.0		SM	Dense, gray, silty SAND (SM), trace gravel, mps 0.5 in., bonded, no odor, wet		5	10	10	60	15				
				52.5		GLACIAL TILL- Note: Drill action indicates probable bedrock at 52.5 ft.										
				55.0		-WEATHERED BEDROCK- Note: Casing refusal at 53.4 ft. Roller bit refusal at 55 ft.										
55						BOTTOM OF EXPLORATION Notes: 1. FV1 (25.3-26.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. HA08-11

Project Maine Health/United Way Development, Portland, Maine
 Client Maine Medical Center
 Contractor Maine Test Borings, Inc.

File No. 35611-000
 Sheet No. 1 of 1
 Start 24 July 2008
 Finish 24 July 2008
 Driller M. Porter
 H&A Rep. O. Lawlor

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	NW	S	--	Rig Make & Model: Mobile Drill B-50 Bombardier
Inside Diameter (in.)	3.0	1 3/8	--	Bit Type: Roller Bit
Hammer Weight (lb)	300	140	-	Drill Mud: None
Hammer Fall (in.)	30	30	-	Casing: NW drive to 16.0 ft.
				Hoist/Hammer: Winch Doughnut Hammer
				PID Make & Model:

Elevation 11 +/-
 Datum Portland City Datum
 Location See Plan

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel			Sand			Field Test				
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength	
0	4	S1	0.0			SM	Medium dense, gray, silty SAND with gravel (SM), trace cinders, mps 0.5 in., no structure, no odor, moist -FILL-	5	5	10	25	35	20					
10	7	17	2.0			SM	Medium dense, gray, silty SAND with gravel (SM), intermixed with 15% cinders, mps 0.5 in., no structure, no odor, moist	5	5	5	25	40	20					
5	5	S2	2.0			SM	Medium dense, gray, silty SAND with gravel (SM), intermixed with 15% cinders, mps 0.5 in., no structure, no odor, moist	5	5	20	20	20	30					
6	11	21	4.0			SW	Note: Groundwater encountered at 5.4 ft. Medium dense, light brown, well-graded SAND (SW), mps 0.25 in., no structure, no odor, moist			30	40	30						
10	7	S4	6.0			SW	Medium dense, light brown, well-graded SAND (SW), with occasional pockets of fine sand, mps 0.25 in., no structure, no odor, moist			30	40	30						
15	7	S5	8.0			SW	Medium dense, gray, well-graded SAND (SW), mps 0.25 in., no structure, no odor, wet -FILL-			35	35	30						
10	4	S6	10.0			SW	Loose, gray, well-graded SAND (SW), mps 0.25 in., no structure, no odor, wet			35	35	30						
11.6	3	NR	12.0			ML	Medium stiff, dark gray, SILT with sand (ML), mps 4.0 mm, no structure, no odor, moist Note: No Recovery. Probable shells in spoon tip, shells observed in wash water. -HARBOR BOTTOM DEPOSIT-				5	5	90					
14.0	1	S7	14.0			CL	Medium stiff, gray with occasional brown mottling, lean CLAY (CL), trace root fibers, mps 2.0 mm, no structure, no odor, moist -GLACIOMARINE DEPOSIT-						100					
16.0								BOTTOM OF EXPLORATION										
								Note: Observation well installed in completed borehole. See Well Installation Report for details.										

HA-TEST BORING-07-1 HA-LIB07-1R-FOR-06-03-08-GLB HA-TB-CORE-WELL-07-1 GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB GPJ 10 Sep 08

Water Level Data				Sample ID		Well Diagram		Summary	
Date	Time	Elapsed Time (hr.)	Depth (ft) to:			O - Open End Rod	Riser Pipe	Overburden (ft)	16.0
			Bottom of Casing	Bottom of Hole	Water				
7/24/08		0.25	14.0	16.0	7.62	U - Undisturbed Sample	Filter Sand	Samples	7S
						S - Split Spoon Sample	Cuttings	Boring No. HA08-12(OW)	
							Grout		
							Concrete		
							Bentonite Seal		

Field Tests: Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
 Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Medium H - High V - Very High

*Note: Maximum particle size is determined by direct observation within the limitations of sampler size.
 Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Test				
							% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
20	WOR WOR WOH WOH	S8 24	20.0 22.0		CL	Medium stiff, silty lean CLAY (CL), mps 2.0 mm, no structure, no odor, moist FV1 (20.3-21.0 ft), Su = ~670/170 psf -GLACIOMARINE DEPOSIT- Note: Trace fine gravel observed in wash water. FV2 (25.3-26.0 ft), Su = 590/240 psf						100	N	L	L	
30	WOR WOR WOH WOH	S9 24	30.0 32.0		CL	Soft, gray, silty lean CLAY (CL), mps 2.0 mm, occasional partings along sand seams, no odor, moist FV3 (30.3-31.0 ft), Su = 280/250 psf -GLACIOMARINE DEPOSIT- FV4 (35.3-36.0 ft), Su = 720/220 psf Note: Sand observed in wash water and on drill rods.			5	95		N	L	L		
40	4 2 2 4	S10 4	40.0 42.0	39.6	SP	Very loose, gray, poorly-graded SAND (SP), mps 4.0 mm, no structure, no odor, wet -GLACIOMARINE DEPOSIT-			45	50	5					
45				46.6		Note: Casing refusal at 46.6 ft. Advanced roller bit to 46.6 ft. Begin NQ rock core at 46.6 ft. See Core Boring Report for details. Notes: 1. FV1 (20.3-21.0 ft) indicates in-situ field vane performed at depth interval shown, corrected peak/residual shear strengths are provided. See Table II for details. 2. WOR = Weight of Drill Rods; WOH = Weight of Hammer.										

H&A-TEST BORING-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611-000 TB.GPJ 10 Sep 08

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Depth (ft)	Drilling Rate (min./ft)	Run No.	Run Depth (ft)	Recovery/RQD		Weathering	Elev./Depth (ft)	Visual Description and Remarks	
				in.	%				
								<i>SEE TEST BORING REPORT FOR OVERBURDEN DETAILS</i>	
2		C1	46.6	40	76		51.0	Moderately hard, moderate to highly weathered, dark green, aphanitic CHLORITE SCHIST. Foliation is extremely thin, high angle. Primary joint set is parallel to foliation, high angle, very close to undulating, fresh to discolored with pyrite, very tight to tight	
2	51.0		0	0					
4									
7									
50									
3		C2	51.0	60	100			51.0	Moderately hard, slightly weathered to fresh, dark green, aphanitic CHLORITE SCHIST. Foliation is extremely thin, high angle to vertical. Primary joint set is parallel to foliation, high angle to vertical, close to very close, smooth to polished, stepped to undulating, fresh to discolored with pyrite, very tight to tight. Occasional extremely thin to thin, high angle to vertical quartz veins
2	56.0		42	70					
2									
2									
2									
2									
55									
2									
									56.0
									BOTTOM OF EXPLORATION
60									
65									
70									
75									

H-A-CORE-WELL07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TB-CORE-WELL-07-1.GDT G:\PROJECTS\35611\FIELD PROGRAMS\35611-000.TB.CPJ 10 Sep 08

APPENDIX C

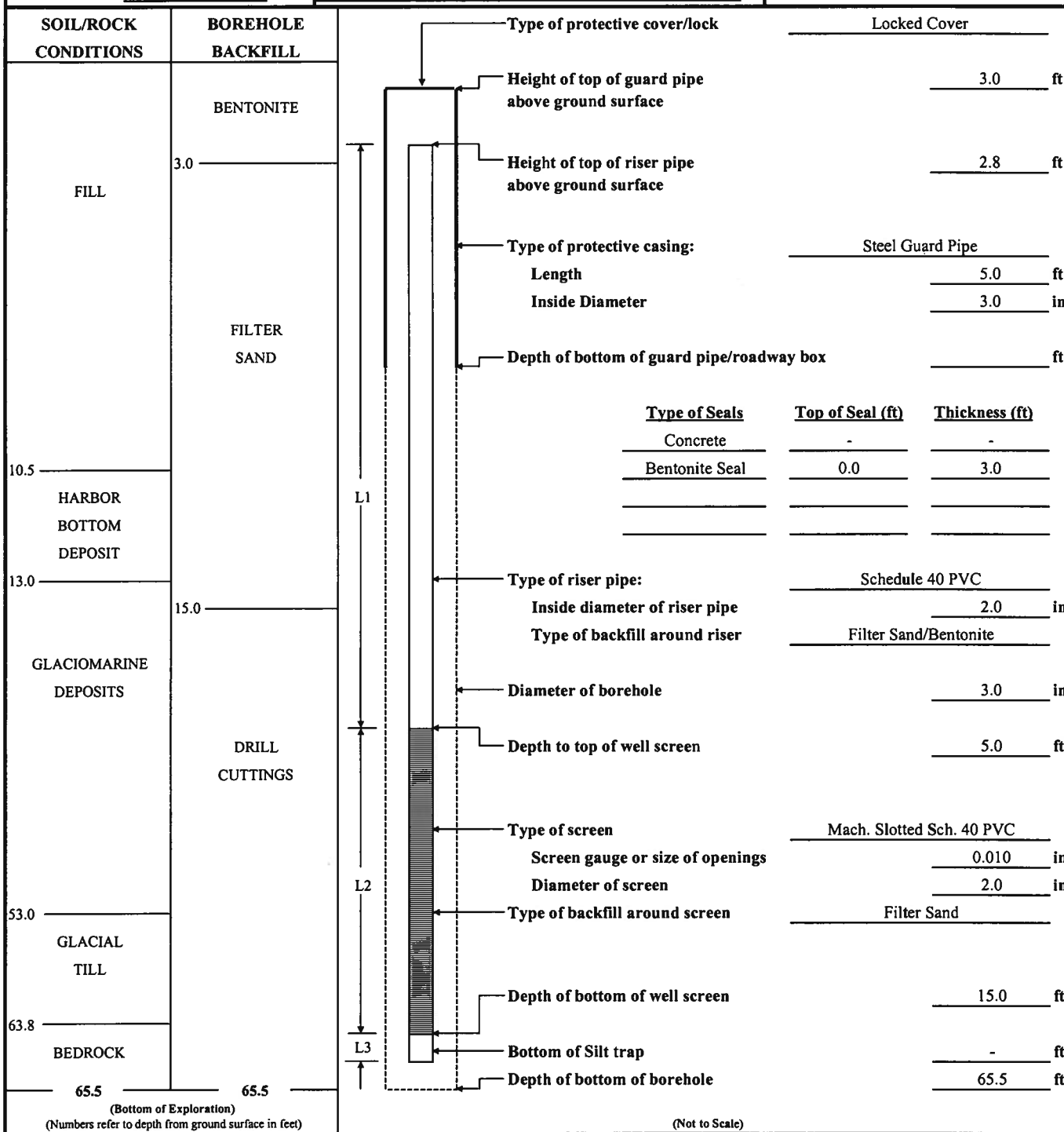
Observation Well Installation and Groundwater Monitoring Reports

OBSERVATION WELL INSTALLATION REPORT

Well No.
HA08-5(OW)
Boring No.
HA08-5(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	8/1/2008
DRILLER	M. Porter	WATER LEVEL	-

Ground El.	9.0 +/- ft	Location	See Plan	<input checked="" type="checkbox"/> Guard Pipe
El. Datum	Portland City			<input type="checkbox"/> Roadway Box

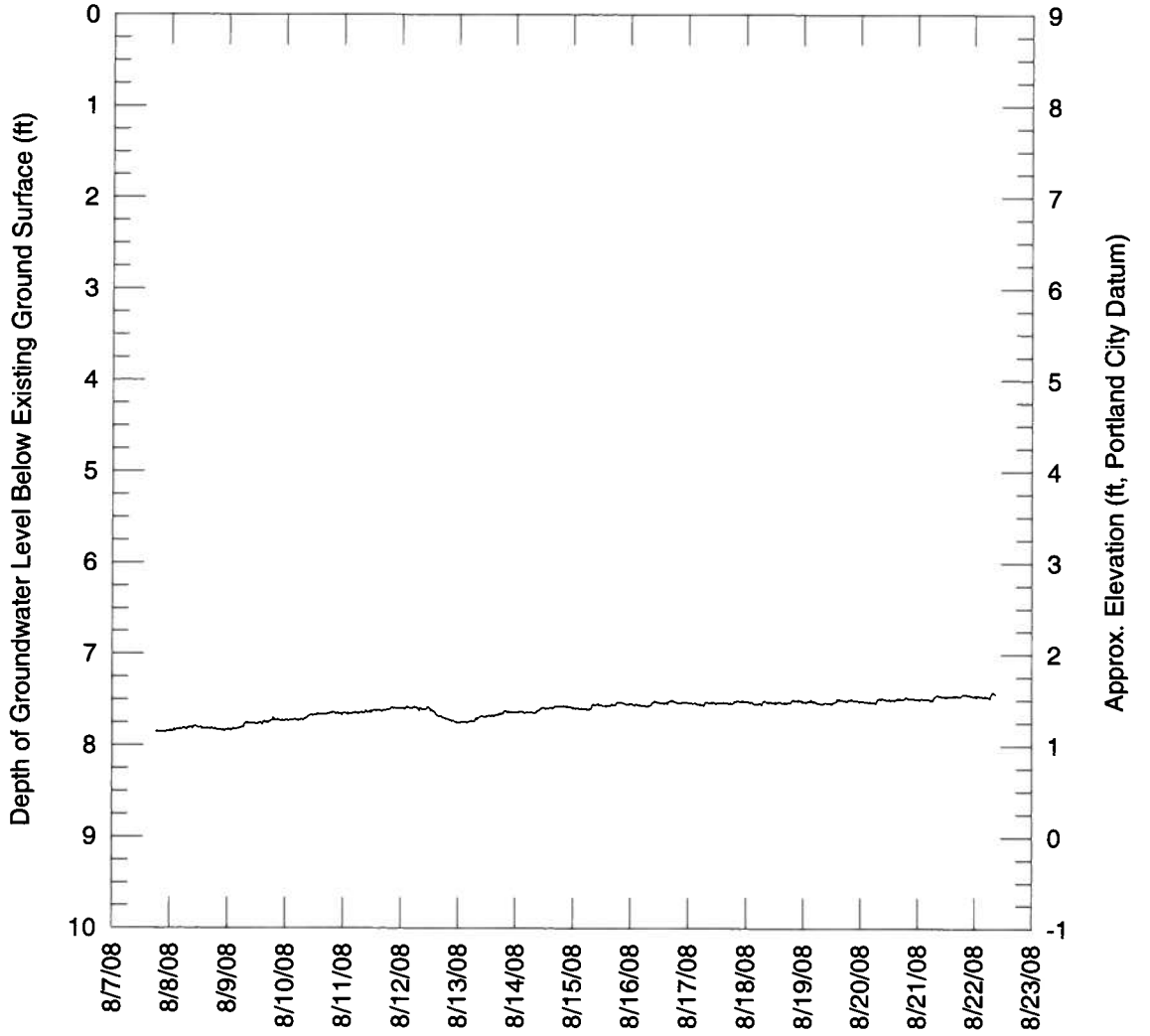


7.8	ft	+	10	ft	+	0	ft	=	17.8	ft
Riser Pay Length (L1)			Length of screen (L2)			Length of silt trap (L3)			Pay length	

COMMENTS: _____

Results of Groundwater Monitoring Observation Well HA08-5(OW)

MaineHealth/UnitedWay Development
Somerset and Chestnut Streets
Portland, Maine
Haley & Aldrich File No. 35611-000

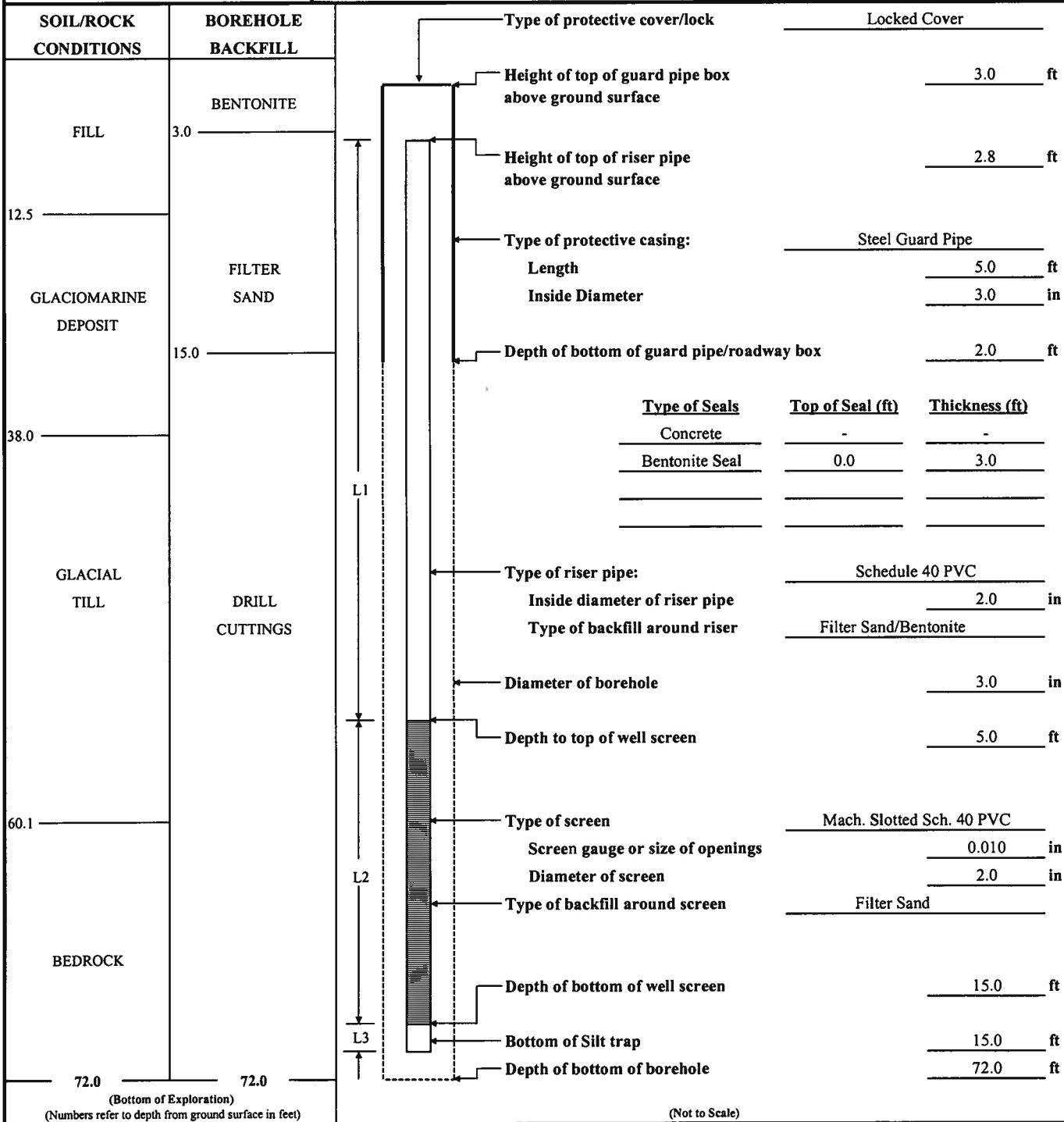


OBSERVATION WELL INSTALLATION REPORT

Well No.
HA08-7(OW)
Boring No.
HA08-7(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	7/31/2008
DRILLER	M. Porter	WATER LEVEL	-

Ground El.	12.0 +/- ft	Location	See Plan	<input checked="" type="checkbox"/>	Guard Pipe
El. Datum	Portland City			<input type="checkbox"/>	Roadway Box

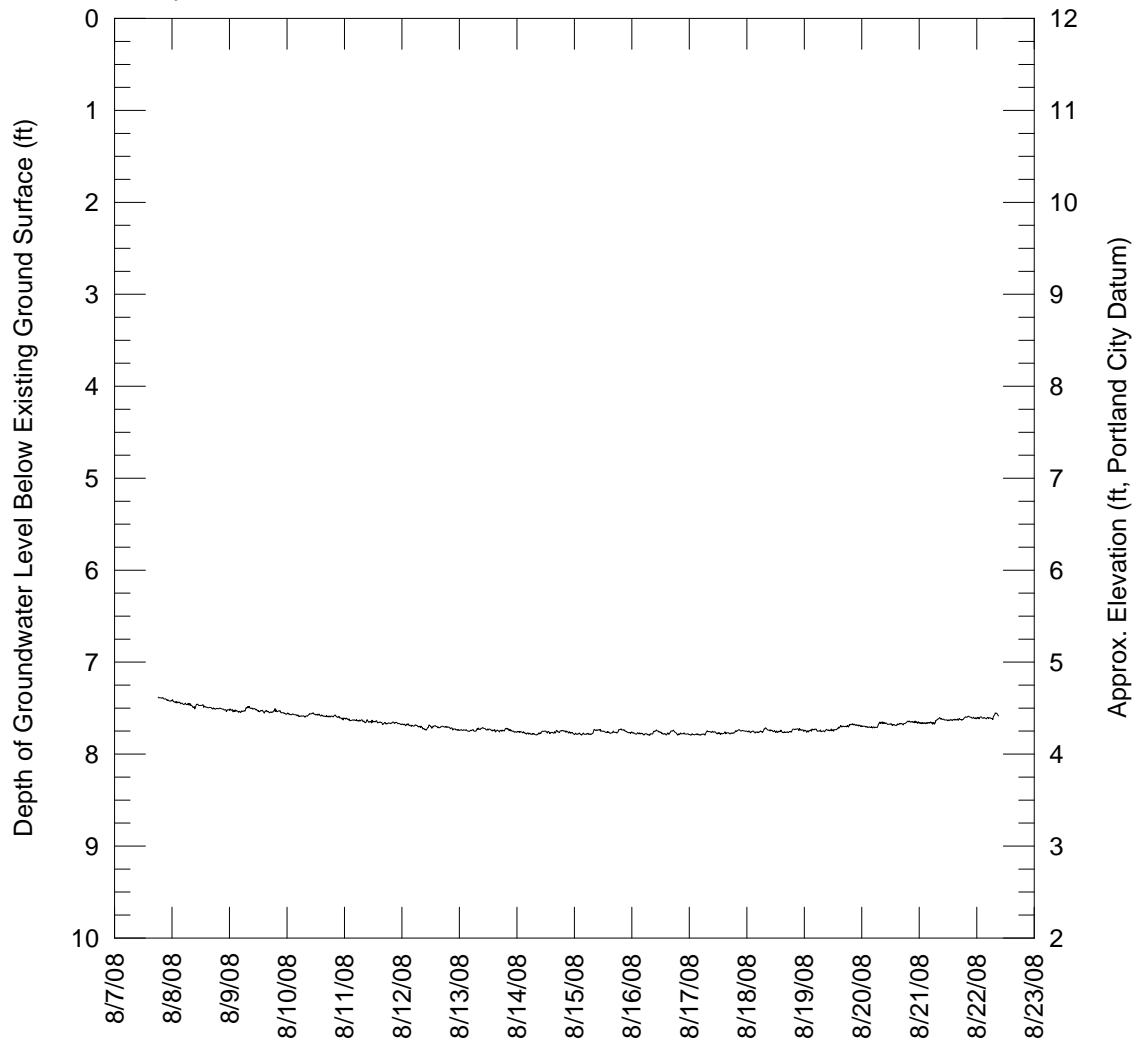


7.8	ft	+	10	ft	+	0	ft	=	17.8	ft
Riser Pay Length (L1)			Length of screen (L2)			Length of silt trap (L3)			Pay length	

COMMENTS: _____

Results of Groundwater Monitoring Observation Well HA08-7(OW)

MaineHealth/UnitedWay Development
Somerset and Chestnut Streets
Portland, Maine
Haley & Aldrich File No. 35611-000

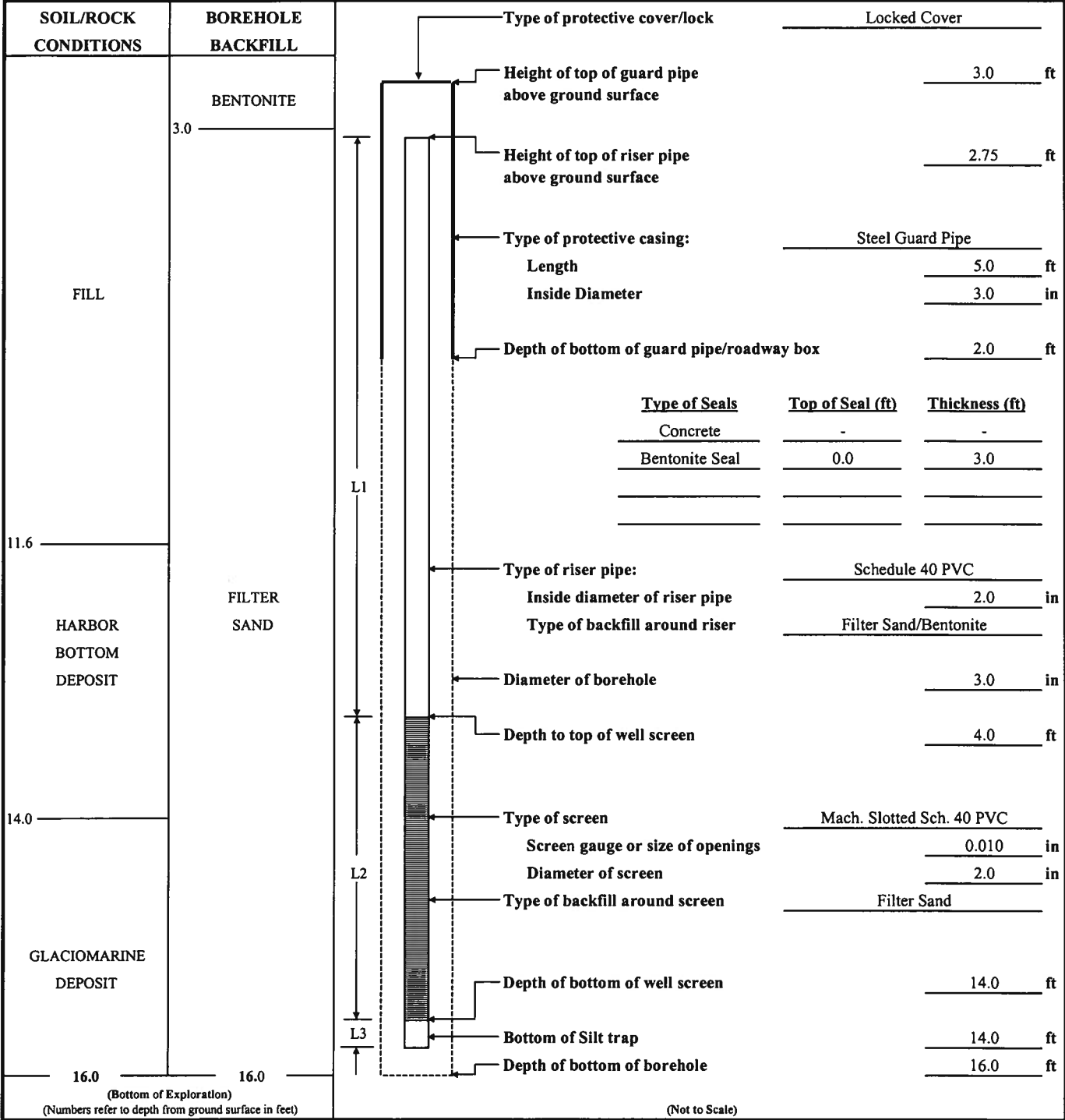


OBSERVATION WELL INSTALLATION REPORT

Well No.
HA08-12(OW)
Boring No.
HA08-12(OW)

PROJECT	Maine Health/United Way Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP.	O. Lawlor
CONTRACTOR	Maine Test Borings, Inc.	DATE INSTALLED	7/24/2008
DRILLER	M. Porter	WATER LEVEL	-

Ground El.	11.0 +/- ft	Location	See Plan	<input checked="" type="checkbox"/>	Guard Pipe
El. Datum	Portland City			<input type="checkbox"/>	Roadway Box

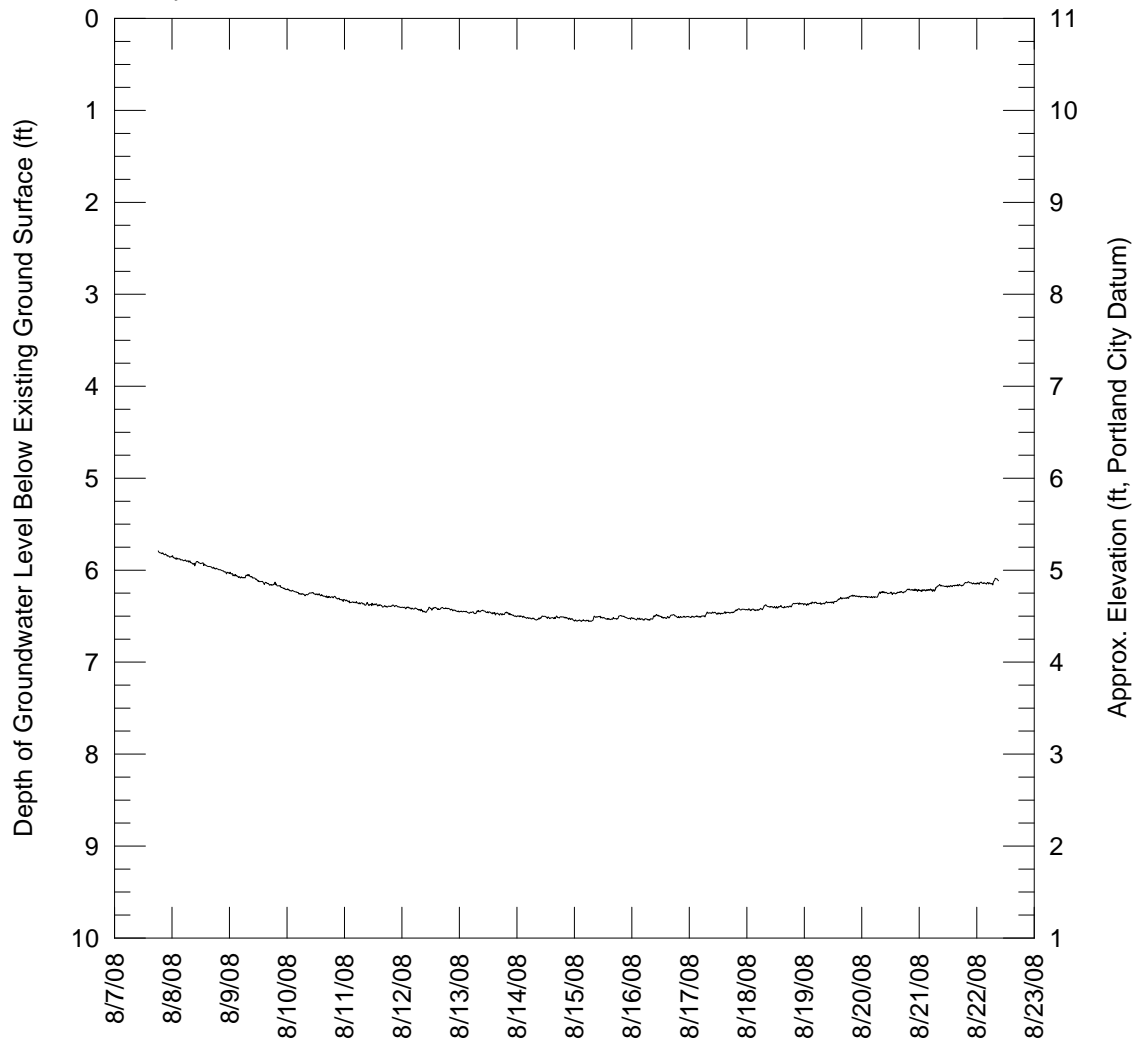


6.75	ft	+	10	ft	+	0	ft	=	16.75	ft
Riser Pay Length (L1)			Length of screen (L2)			Length of silt trap (L3)			Pay length	

COMMENTS: _____

Results of Groundwater Monitoring Observation Well HA08-12(OW)

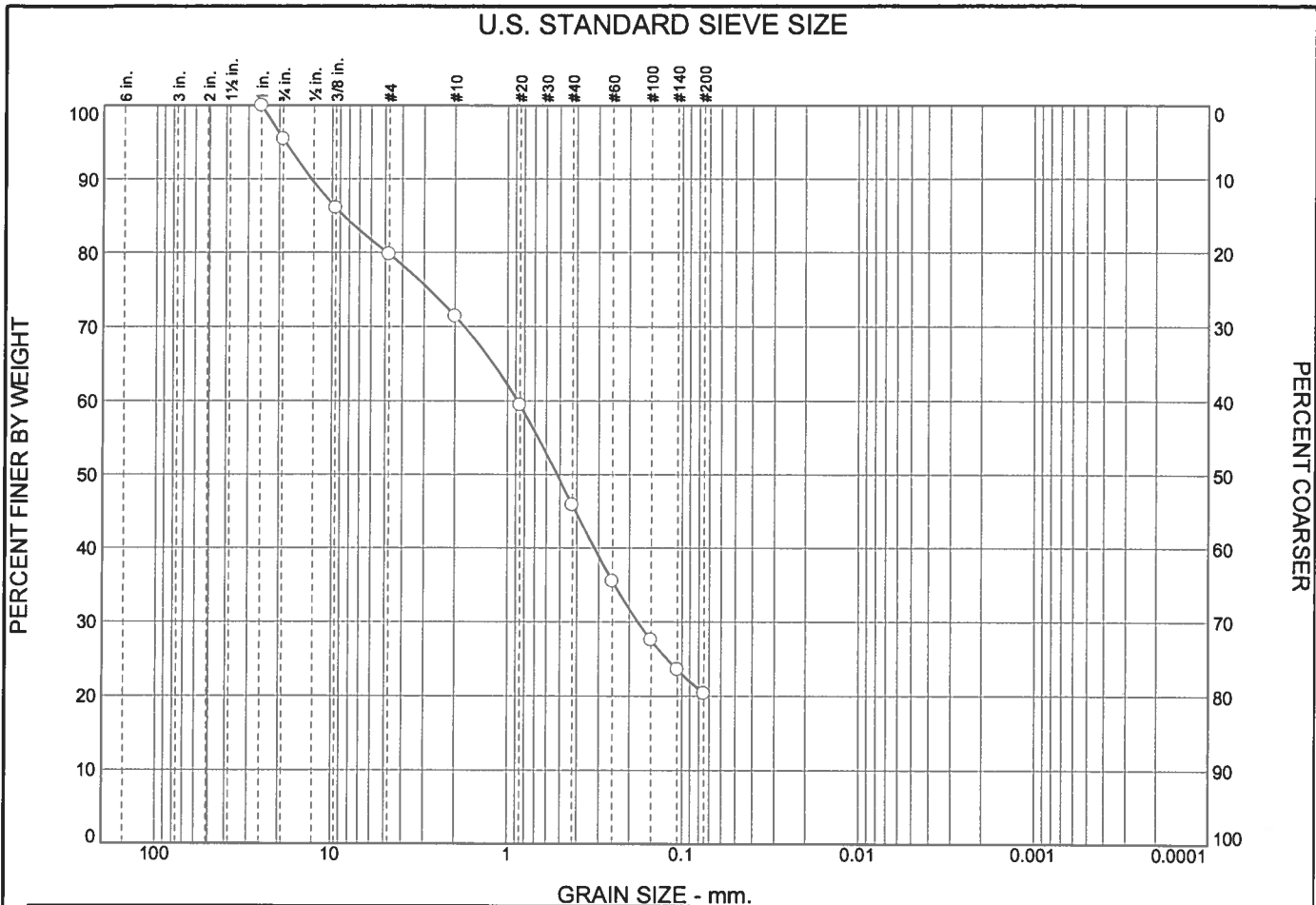
MaineHealth/UnitedWay Development
Somerset and Chestnut Streets
Portland, Maine
Haley & Aldrich File No. 35611-000



APPENDIX D

Laboratory Test Results

Grain Size Distribution Reports



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.5	15.8	8.3	25.6	25.5	20.3	

Expl. No.	Sample No.	Depth (ft)	Atterberg Limits %			Water Content (%)	C _u	C _c	USCS
			W _L	W _P	I _p				
HA08-4	C01	0.5-4.5				9.9			SM

Sample Description

Dark brown silty sand with gravel

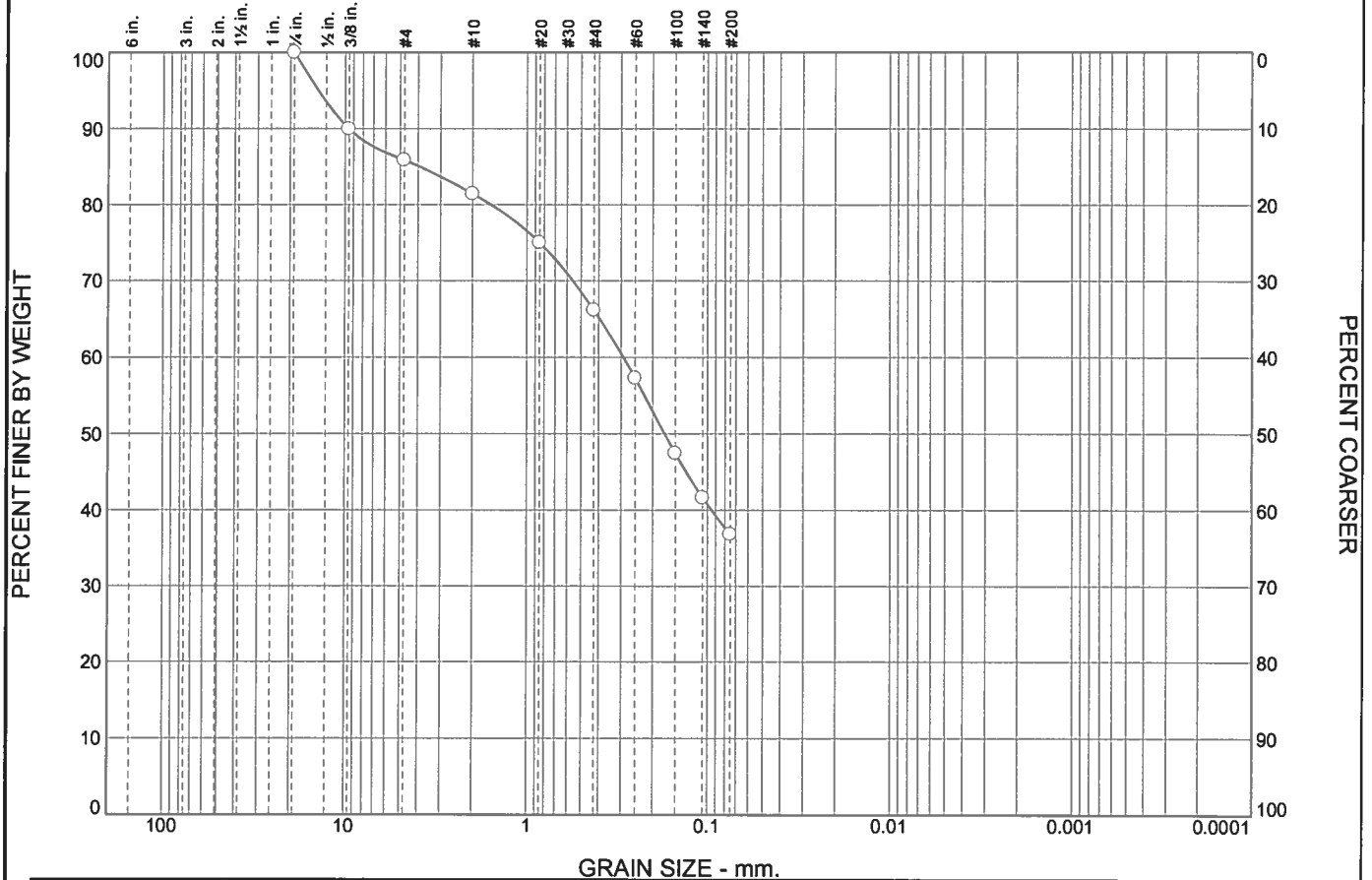
Remarks:
 Composite Sample: S01 & S02

Maine Health/United Way Development
 Portland, Maine

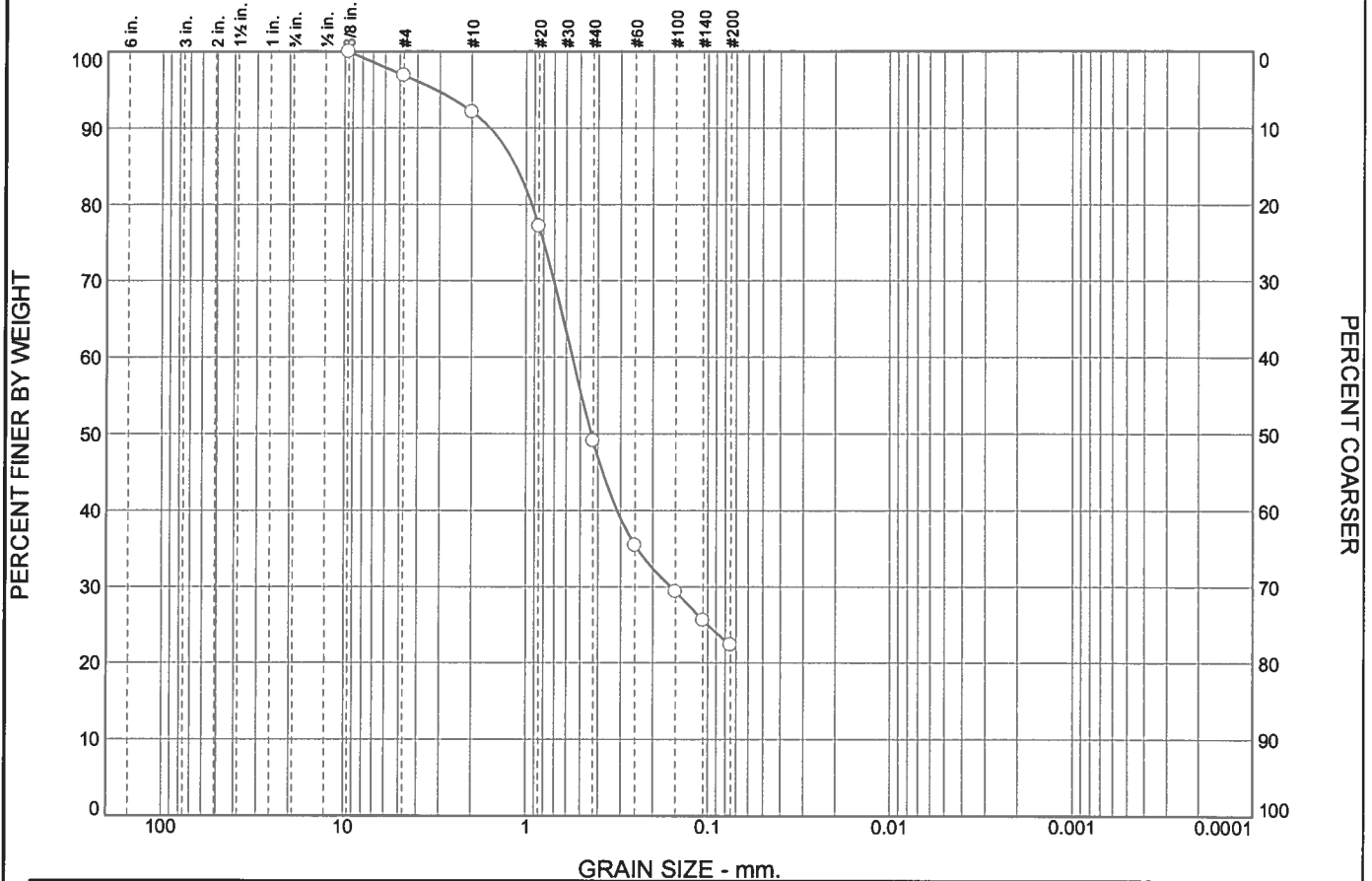
HALEY & ALDRICH GRAIN SIZE DISTRIBUTION

DATE: 8/29/2008 FILE NO: 35611-000

U.S. STANDARD SIEVE SIZE



U.S. STANDARD SIEVE SIZE



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.1	4.8	43.0	26.8		22.3

Expl. No.	Sample No.	Depth (ft)	Atterberg Limits %			Water Content (%)	C _u	C _c	USCS
			W _L	W _p	I _p				
HA08-12	S03	4.0-6.0				9.7			SM

Sample Description

Brown silty sand

Remarks:

Maine Health/United Way Development
Portland, Maine

HALEY & ALDRICH

GRAIN SIZE DISTRIBUTION

DATE: 8/29/2008 FILE NO: 35611-000

Atterberg Limits and Natural Water Content Reports

Client:	Haley & Aldrich, Inc.		Project No:	GTX-8427
Project:	Maine Health / United Way Development			
Location:	Portland, ME			
Boring ID: ---	Sample Type: ---	Tested By:	ap	
Sample ID:---	Test Date: 08/15/08	Checked By:	jdt	
Depth : ---	Sample Id: ---			

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content,%
HA08-4	S-12	30-32 ft	Moist, olive gray clay	38.3
HA08-4	S-13	40-42 ft	Moist, olive gray clay	41.8
HA08-8	S-10	30-32 ft	Moist, olive gray clay	42.7
HA08-8	S-11	35-37 ft	Moist, olive gray clay	30.8

Notes: Temperature of Drying : 110° Celsius



a subsidiary of Geocomp Corporation

Client:	Haley & Aldrich, Inc.		
Project:	Maine Health / United Way Development		
Location:	Portland, ME	Project No:	GTX-8427
Boring ID: ---	Sample Type: ---	Tested By:	ap
Sample ID:---	Test Date: 09/03/08	Checked By:	jdt
Depth : ---	Sample Id: ---		

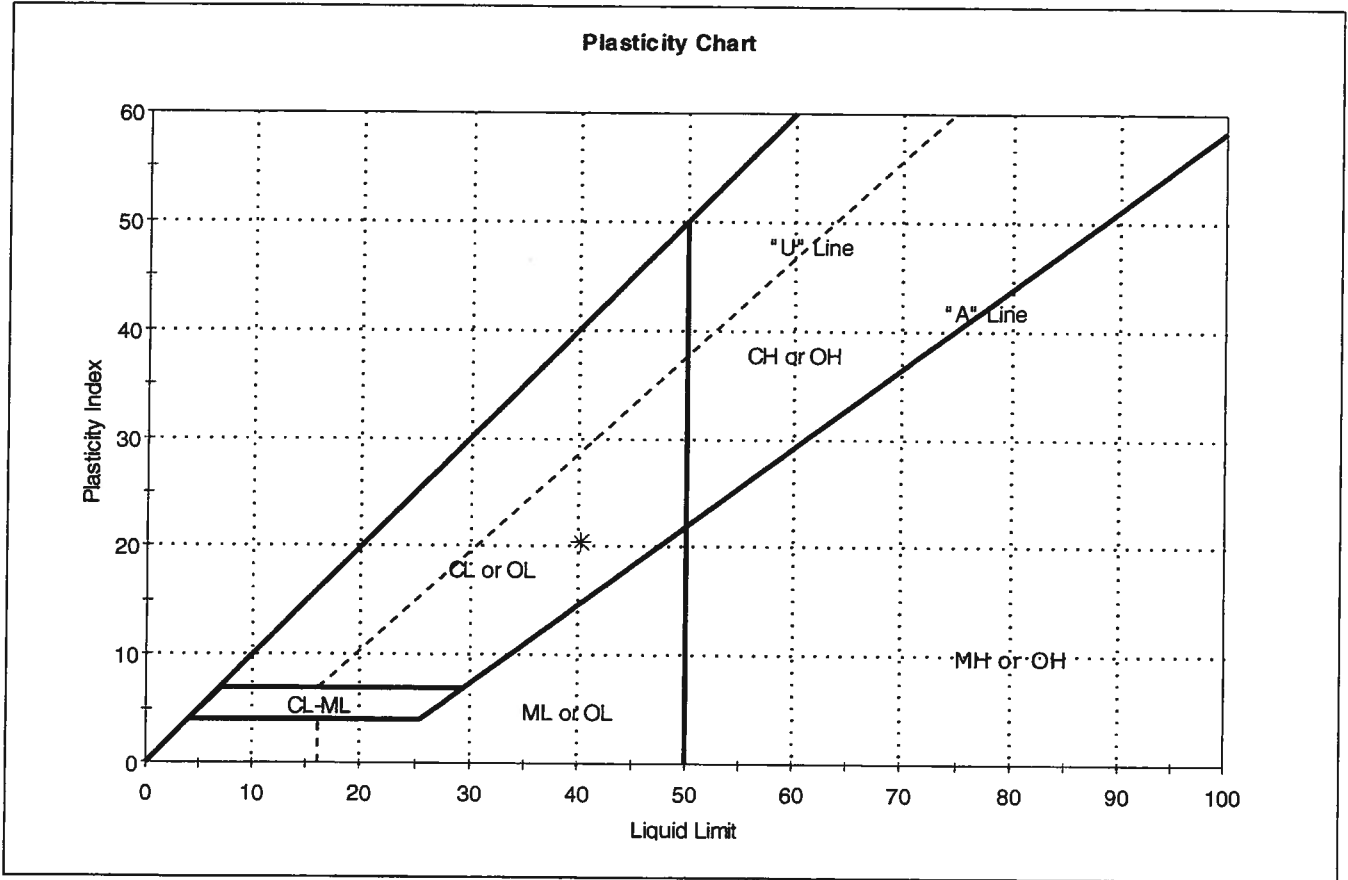
Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content,%
HA08-4	U-2	33-35 ft	Moist, dark greenish gray clay	31.4
HA08-10	U-1	25-27 ft	Moist, gray clay	37.9

Notes: Temperature of Drying : 110° Celsius

Client: Haley & Aldrich, Inc.	Project: Maine Health / United Way Development	Project No: GTX-8427
Location: Portland, ME	Boring ID: HA08-4	Sample Type: jar
Sample ID: S-12	Test Date: 08/12/08	Tested By: ap
Depth: 30-32 ft	Test Id: 136560	Checked By: jdt
Test Comment: ---	Sample Description: Moist, olive gray clay	Sample Comment: ---

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-12	HA08-4	30-32 ft	38	40	20	20	1	

Sample Prepared using the WET method

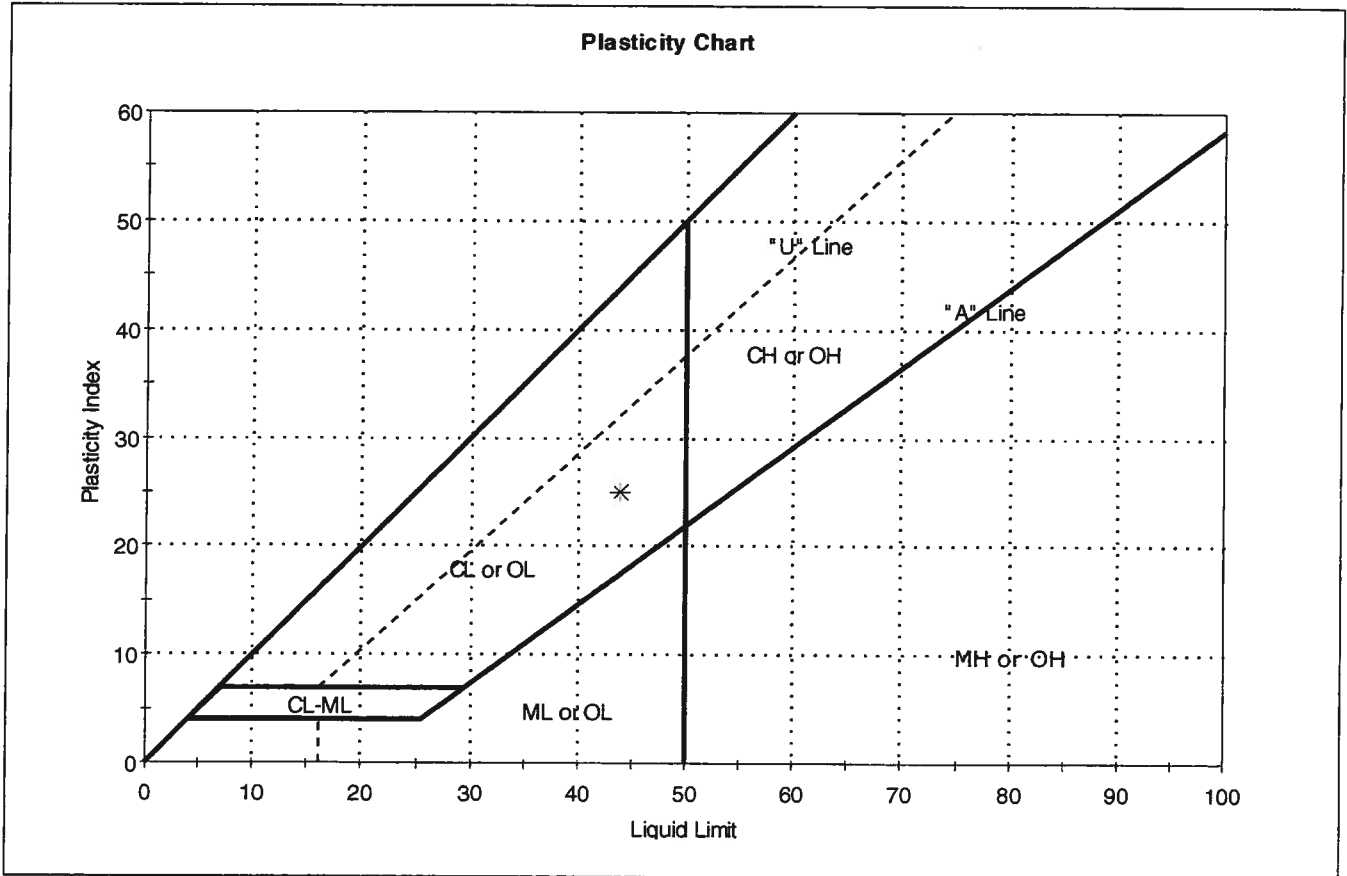
Dry Strength: VERY HIGH

Dilancy: SLOW

Toughness: LOW

Client: Haley & Aldrich, Inc.	Project: Maine Health / United Way Development	Project No: GTX-8427
Location: Portland, ME	Boring ID: HA08-4	Sample Type: jar
Sample ID: S-13	Test Date: 08/13/08	Tested By: ap
Depth: 40-42 ft	Test Id: 136561	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, olive gray clay		
Sample Comment: ---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-13	HA08-4	40-42 ft	42	44	19	25	1	

Sample Prepared using the WET method

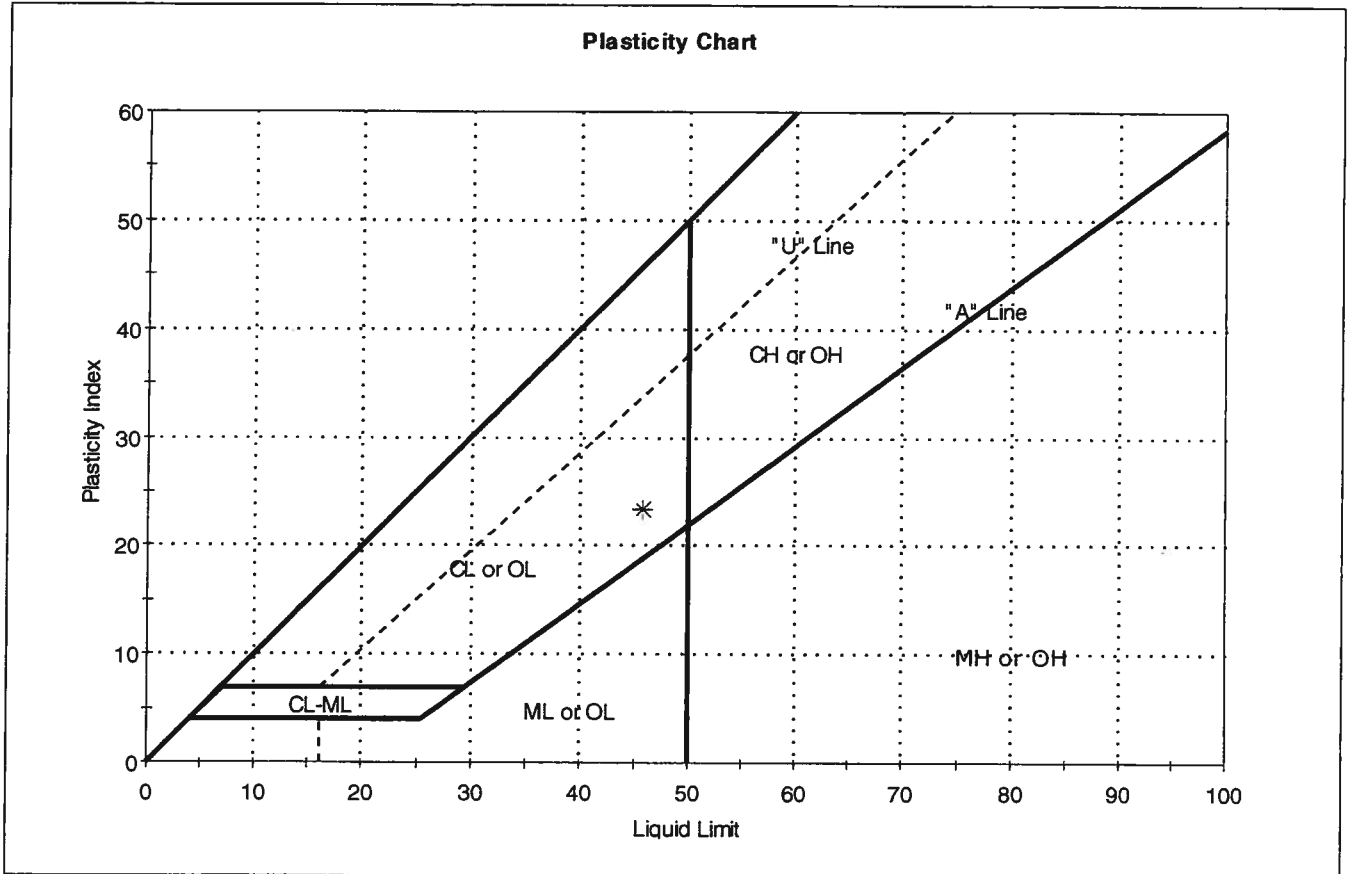
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Haley & Aldrich, Inc.	Project: Maine Health / United Way Development	Project No: GTX-8427
Location: Portland, ME	Boring ID: HA08-8	Sample Type: jar
Sample ID: S-10	Test Date: 08/12/08	Tested By: ap
Depth: 30-32 ft	Test Id: 136562	Checked By: jdt
Test Comment: ---	Sample Description: Moist, olive gray clay	Sample Comment: ---

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-10	HA08-8	30-32 ft	43	46	23	23	1	

Sample Prepared using the WET method

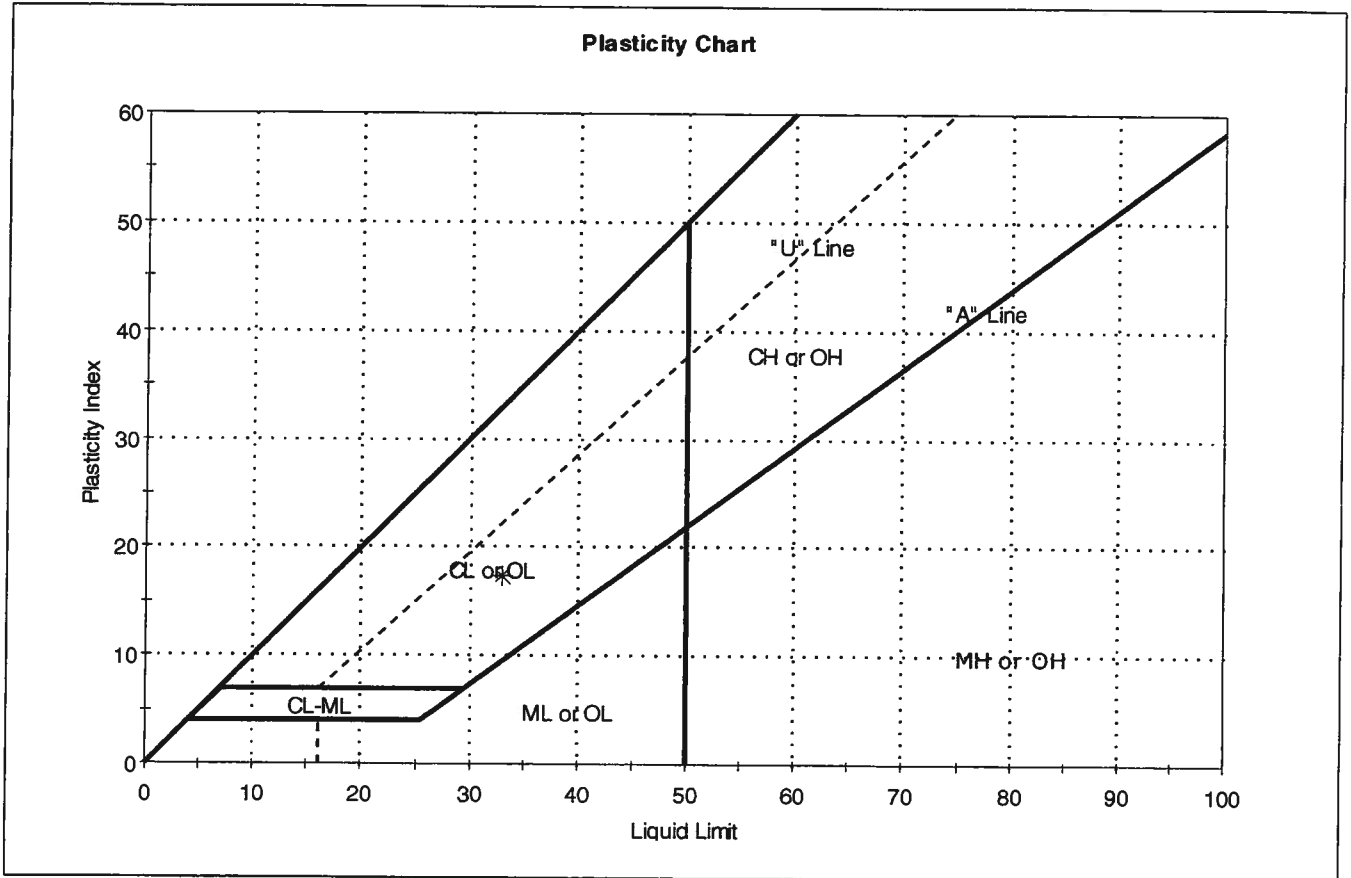
Dry Strength: VERY HIGH

Dilancy: SLOW

Toughness: LOW

Client: Haley & Aldrich, Inc.	Project: Maine Health / United Way Development	Project No: GTX-8427
Location: Portland, ME	Boring ID: HA08-8	Sample Type: jar
Sample ID: S-11	Test Date: 08/13/08	Tested By: ap
Depth: 35-37 ft	Test Id: 136563	Checked By: jdt
Test Comment: ---	Sample Description: Moist, olive gray clay	Sample Comment: ---

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	S-11	HA08-8	35-37 ft	31	33	16	17	1	

Sample Prepared using the WET method

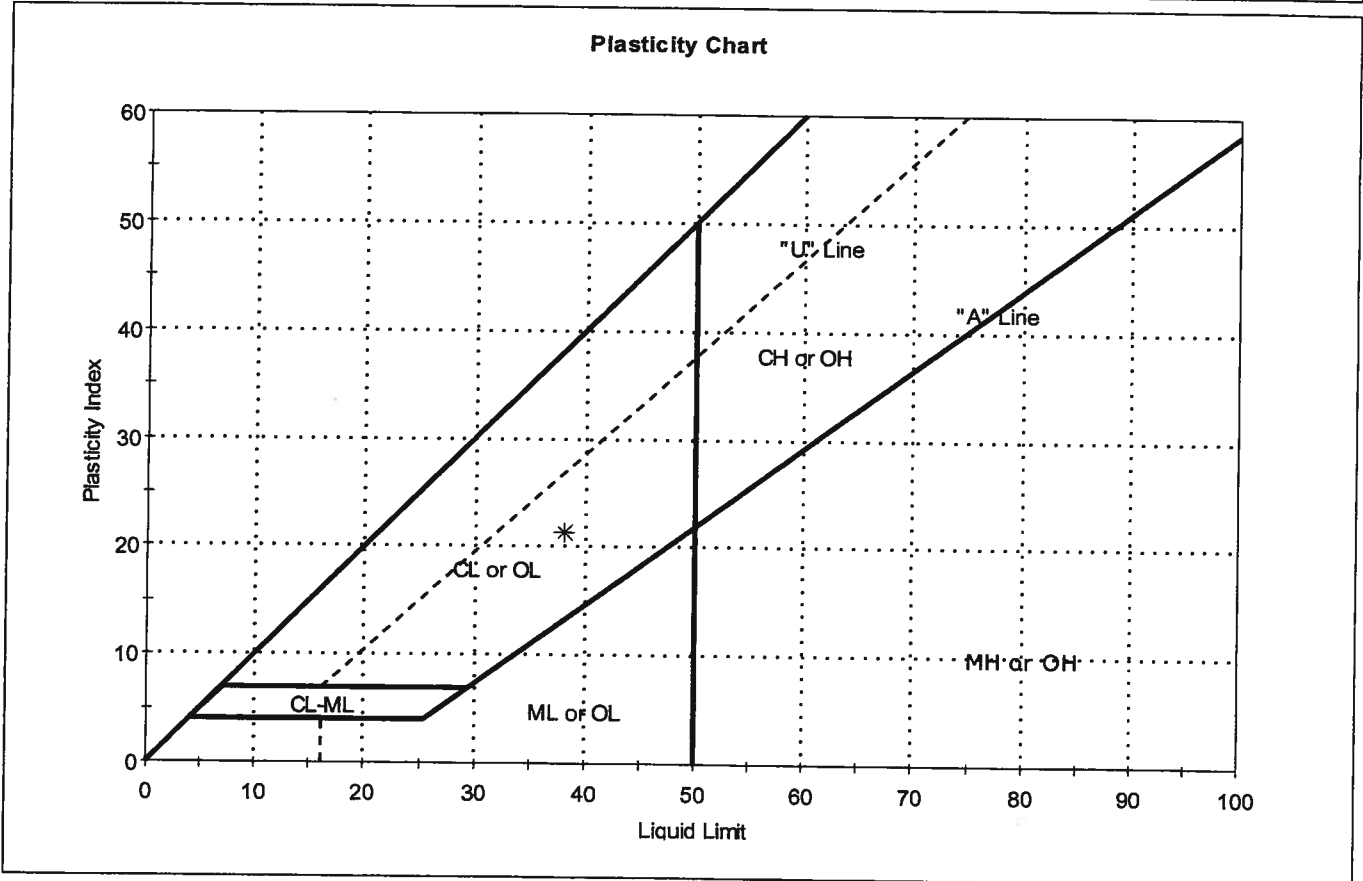
Dry Strength: VERY HIGH

Dilancy: SLOW

Toughness: LOW

Client: Haley & Aldrich, Inc.	Project: Maine Health / United Way Development	Project No: GTX-8427
Location: Portland, ME	Boring ID: HA08-10	Sample Type: tube
Sample ID: U-1	Test Date: 08/26/08	Tested By: ap
Depth: 25-27 ft	Test Id: 136852	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, gray clay		
Sample Comment: ---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	U-1	HA08-10	25-27 ft	38	38	17	21	1	

Sample Prepared using the WET method

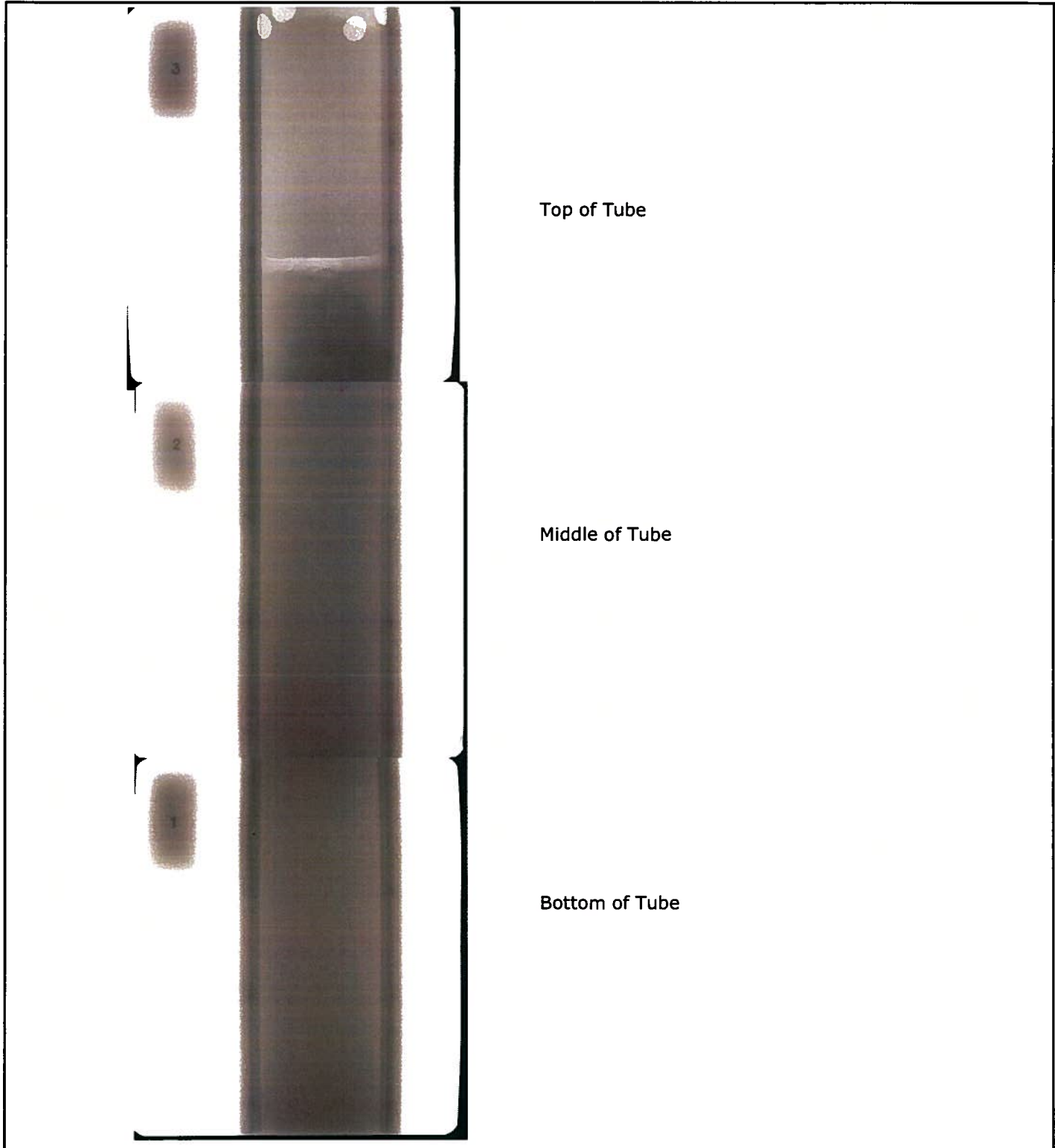
Dry Strength: VERY HIGH

Dilatancy: SLOW

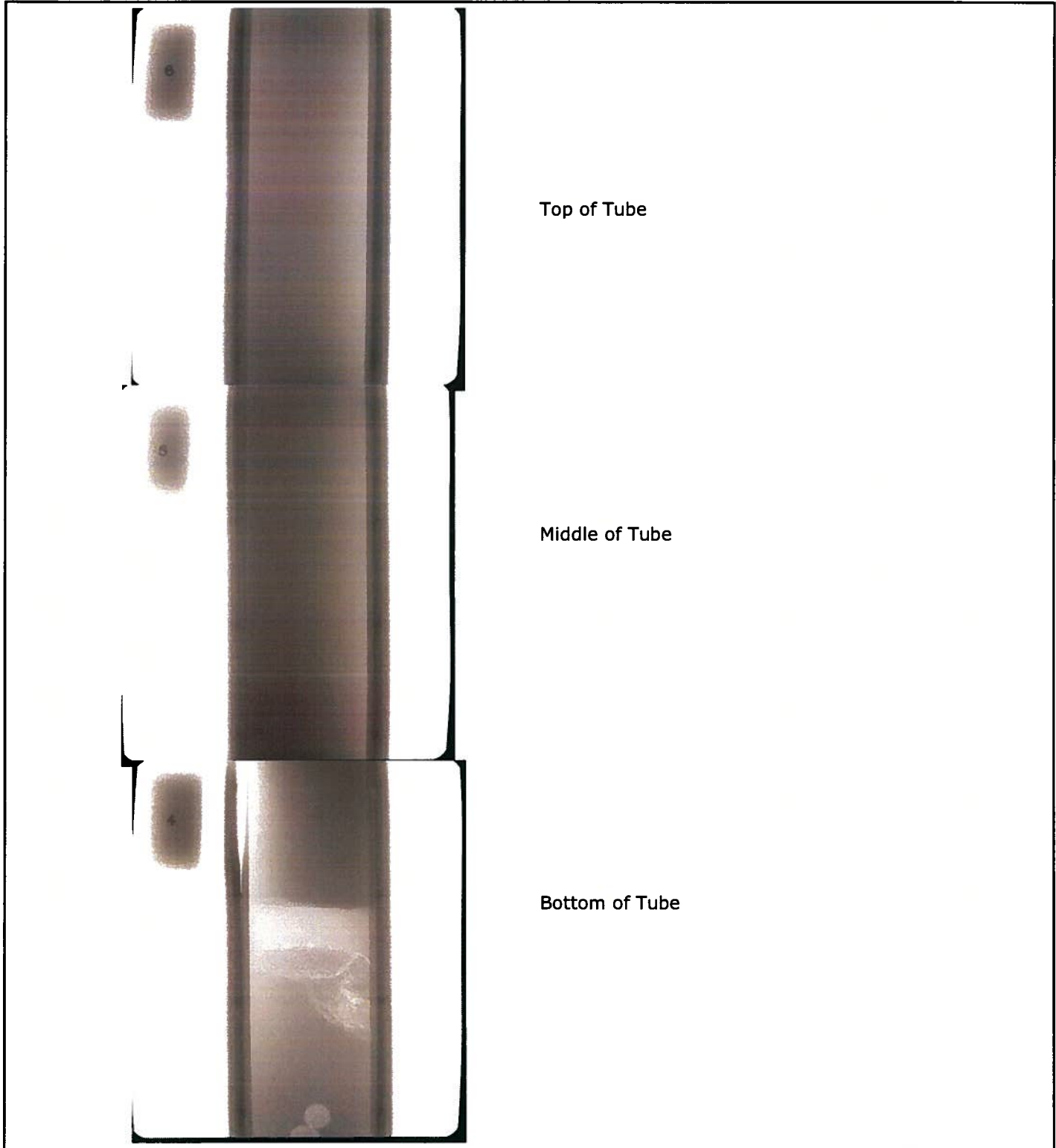
Toughness: LOW

Radiography Test Reports

Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-4
Sample ID:	U-1
Depth, ft:	25-27



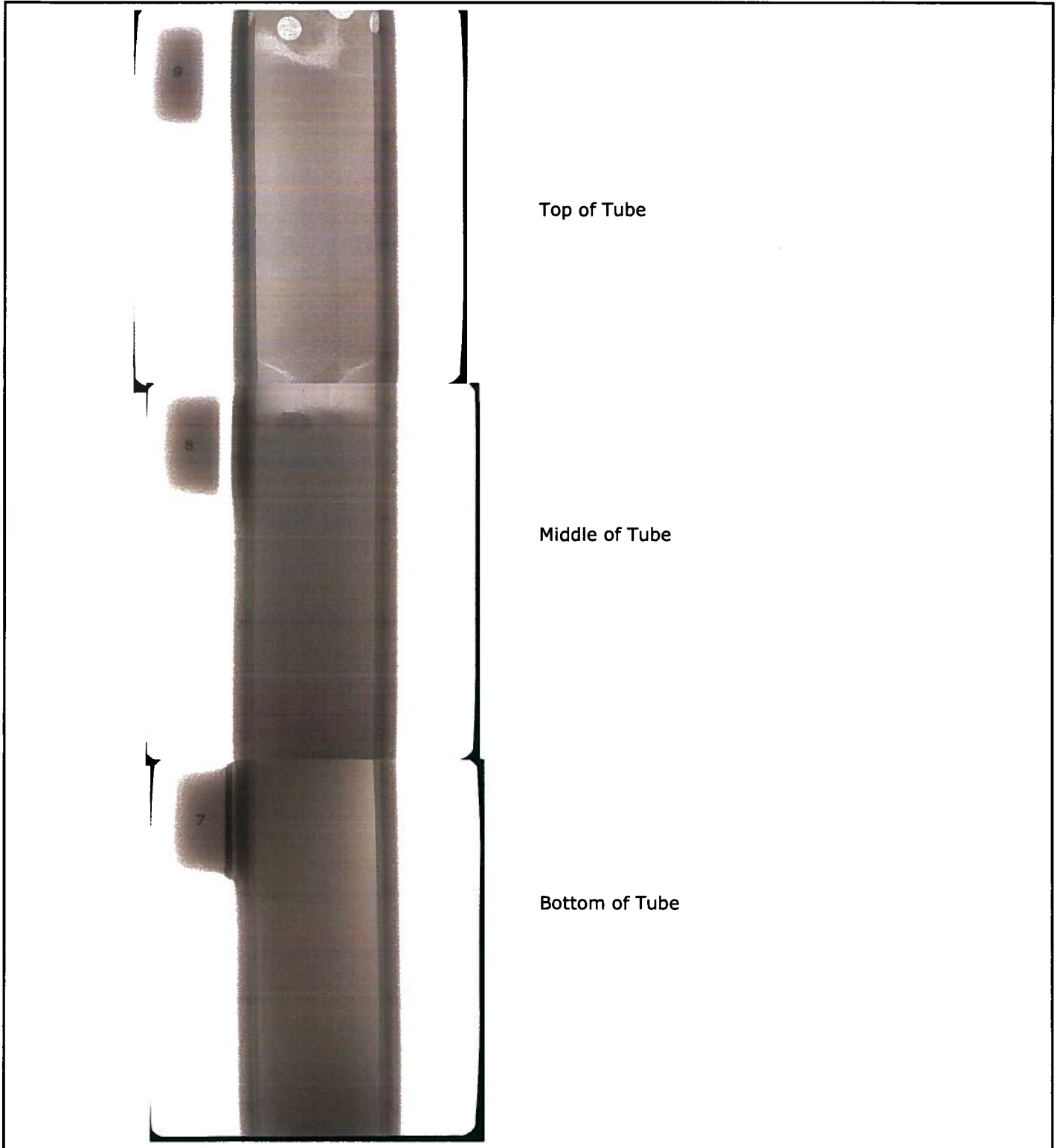
Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-4
Sample ID:	U-2
Depth, ft:	33-35



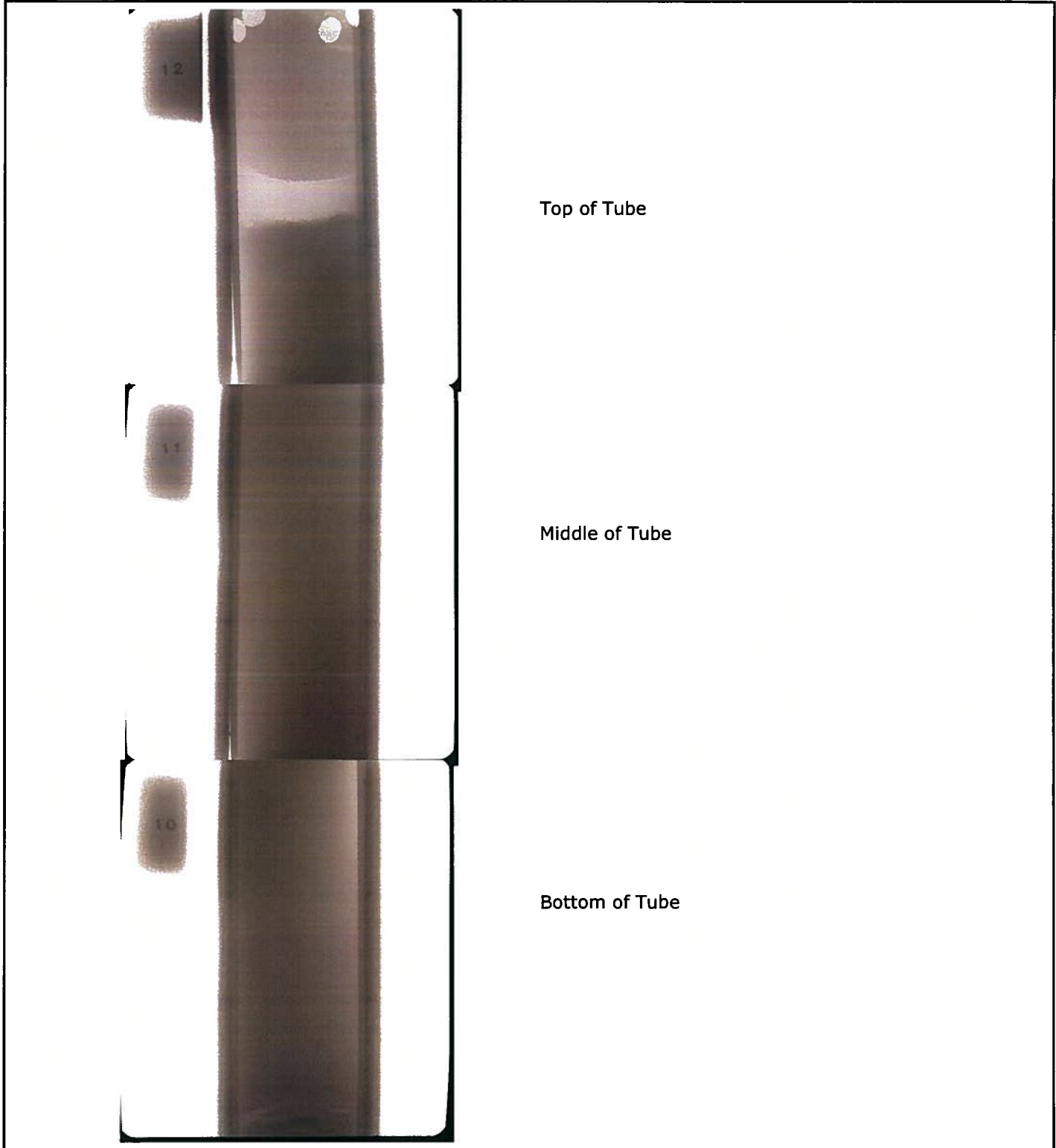
GeoTesting express

a subsidiary of Geocomp Corporation

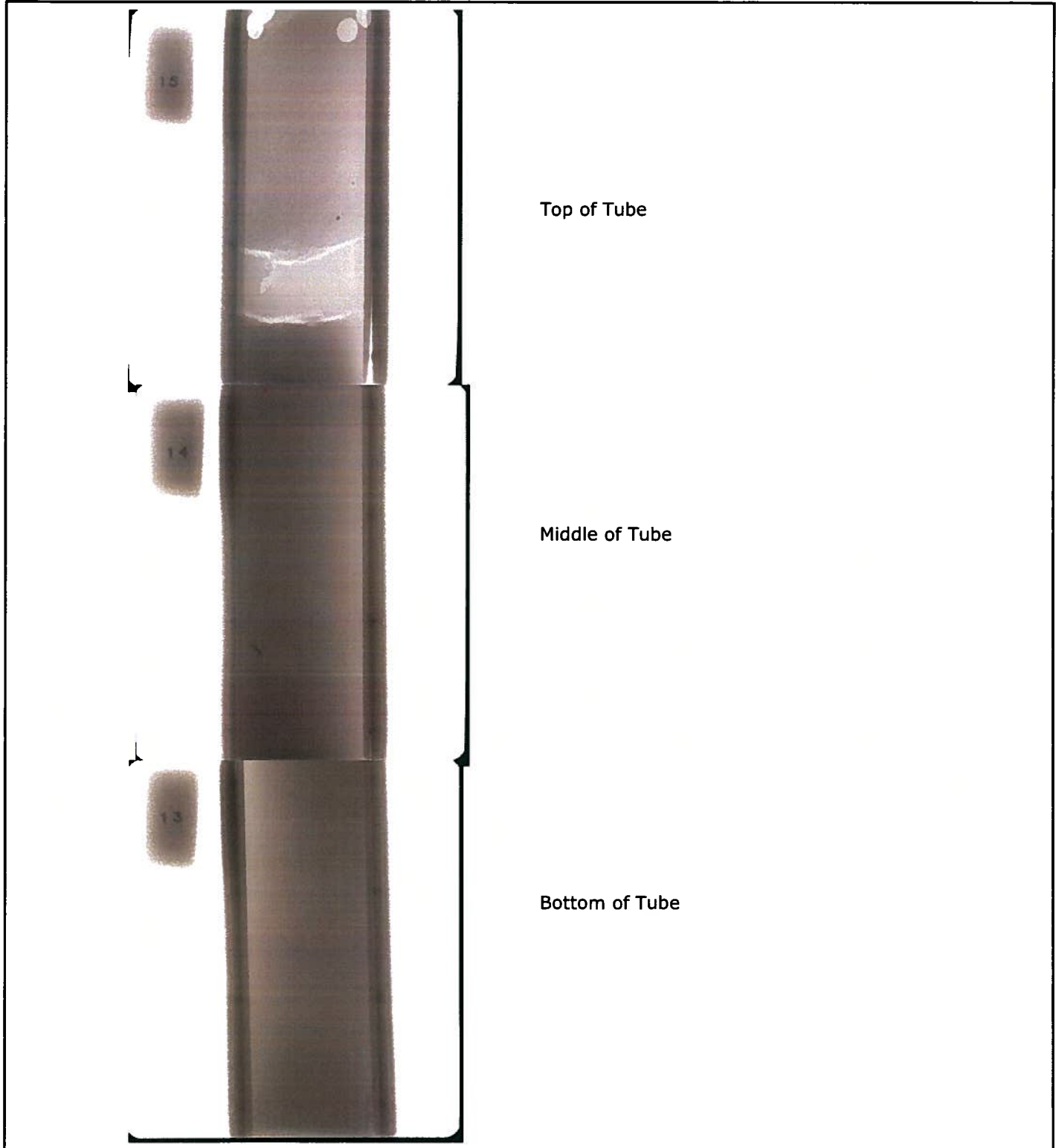
Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-8
Sample ID:	U-1
Depth, ft:	20-22



Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-8
Sample ID:	U-2
Depth, ft:	41-43

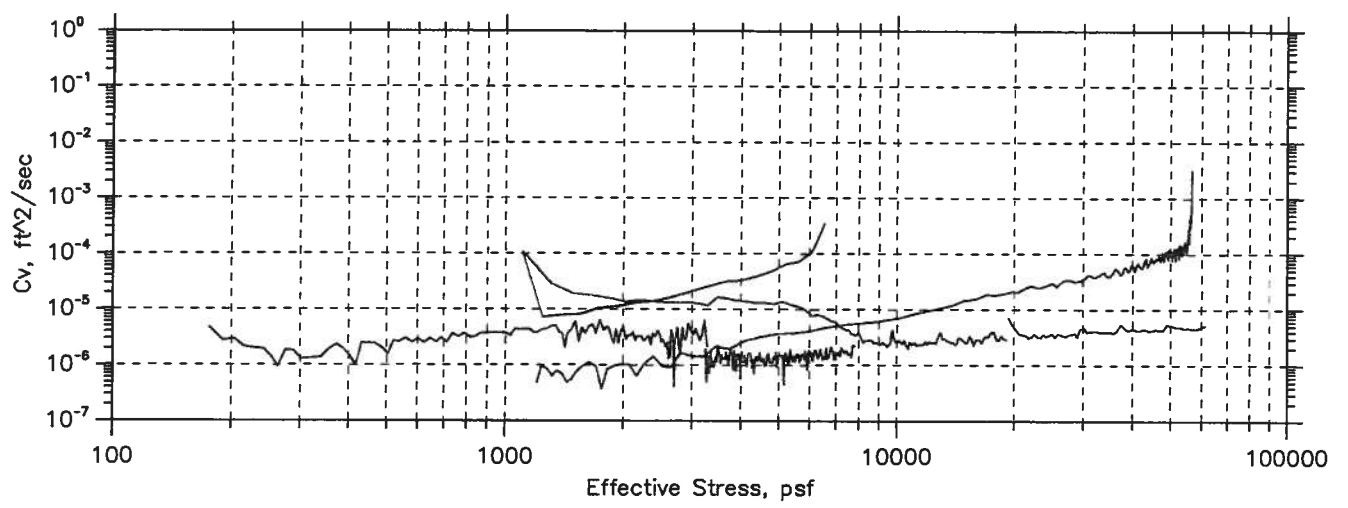
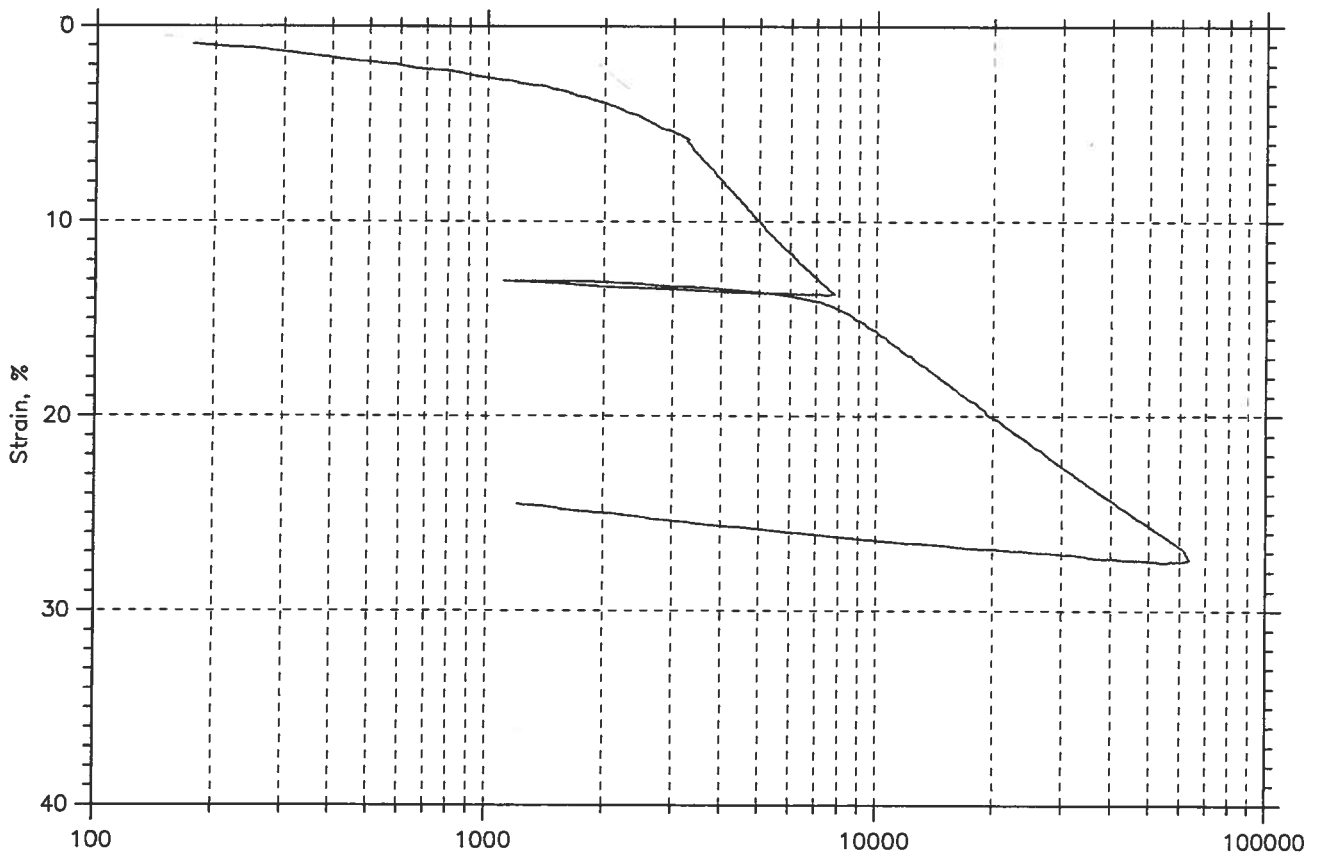


Client:	Haley & Aldrich, Inc.
Project Name:	Maine Health/United Way Development
Project Location:	Portland, ME
GTX #:	8427
Test Date:	08/11/08
Tested By:	edd/md
Checked By:	jdt
Boring ID:	HA08-10
Sample ID:	U-1
Depth, ft:	25-27



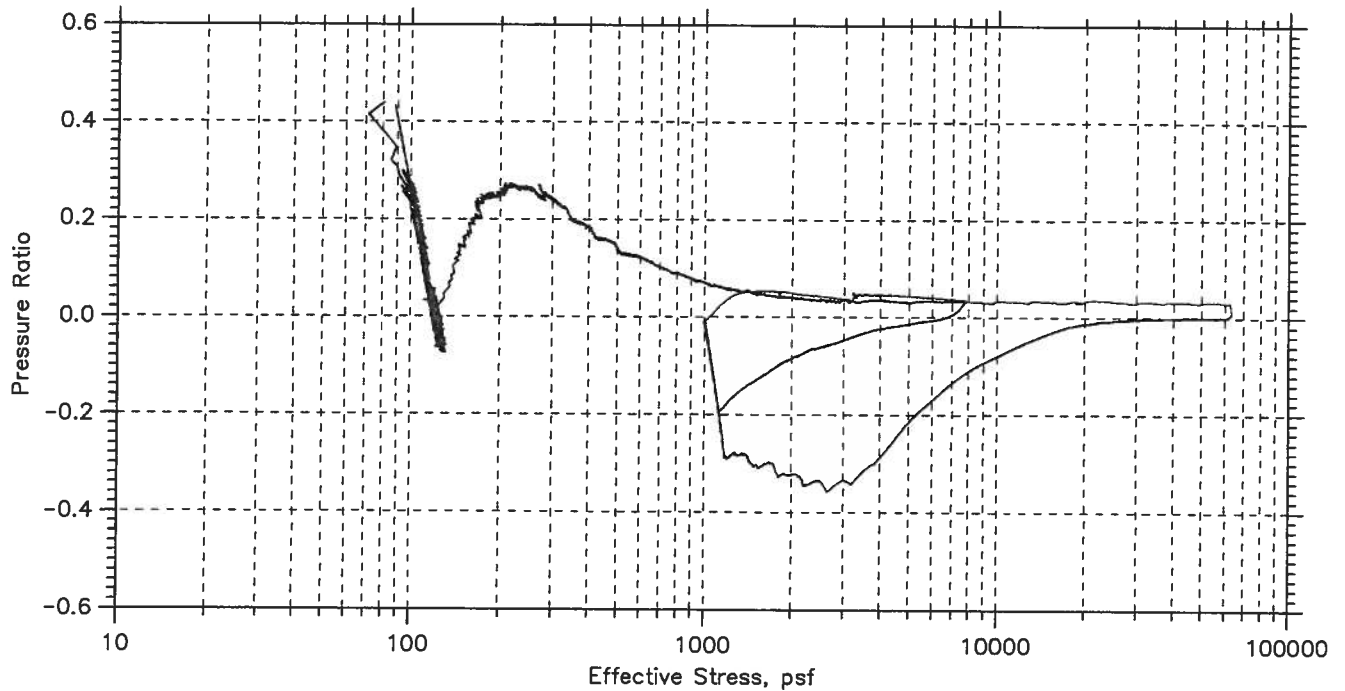
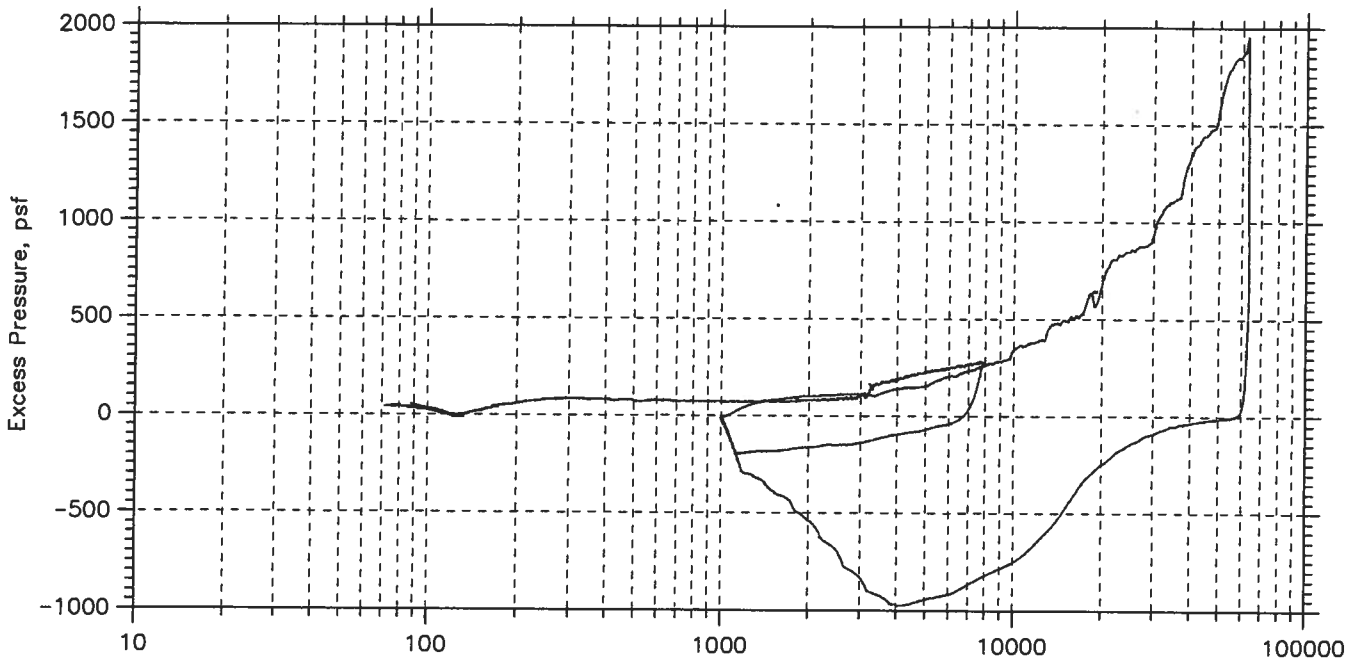
Consolidation Test Reports

Constant Rate of Consolidation
 Constant Strain Rate by ASTM D4186
 Summary Report



Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-4	Tested By: md	Checked By: jdt
Sample No.: U-2	Test Date: 08/27/08	Depth: 33-35
Test No.: CRC-1A	Sample Type: tube	Elevation: ---
Description: Moist, dark greenish gray clay		
Remarks: System S		

Constant Rate of Consolidation
 Constant Strain Rate by ASTM D4186
 Pressure Curves



Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-4	Tested By: md	Checked By: jdt
Sample No.: U-2	Test Date: 08/27/08	Depth: 33-35
Test No.: CRC-1A	Sample Type: tube	Elevation: ---
Description: Moist, dark greenish gray clay		
Remarks: System S		

CRC TEST DATA

Project: Maine Health
 Boring No.: HA-08-4
 Sample No.: U-2
 Test No.: CRC-1A

Location: Portland, ME
 Tested By: md
 Test Date: 08/27/08
 Sample Type: tube

Project No.: GTX-8427
 Checked By: jdt
 Depth: 33-35
 Elevation: ---

Soil Description: Moist, dark greenish gray clay
 Remarks: System S

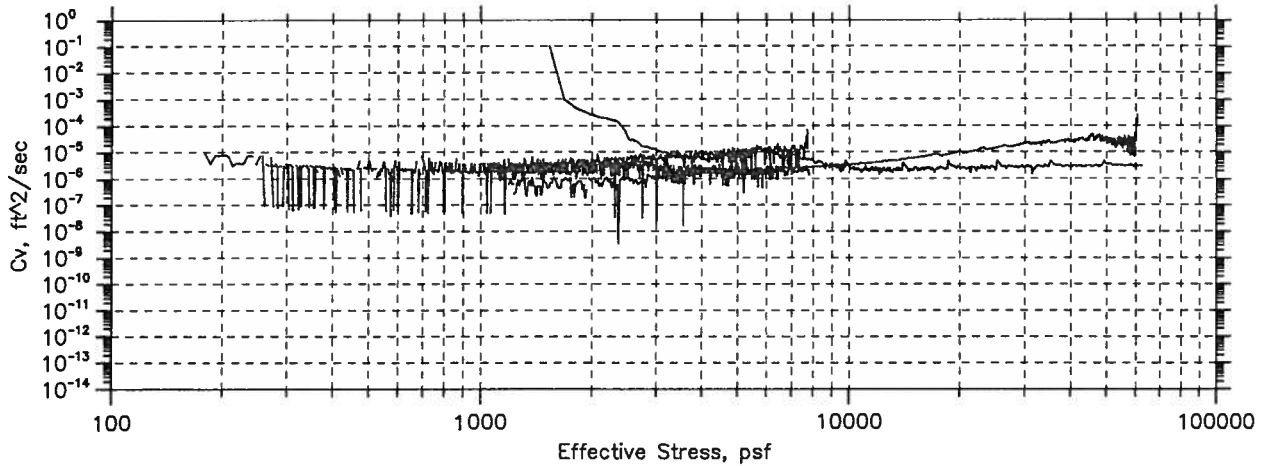
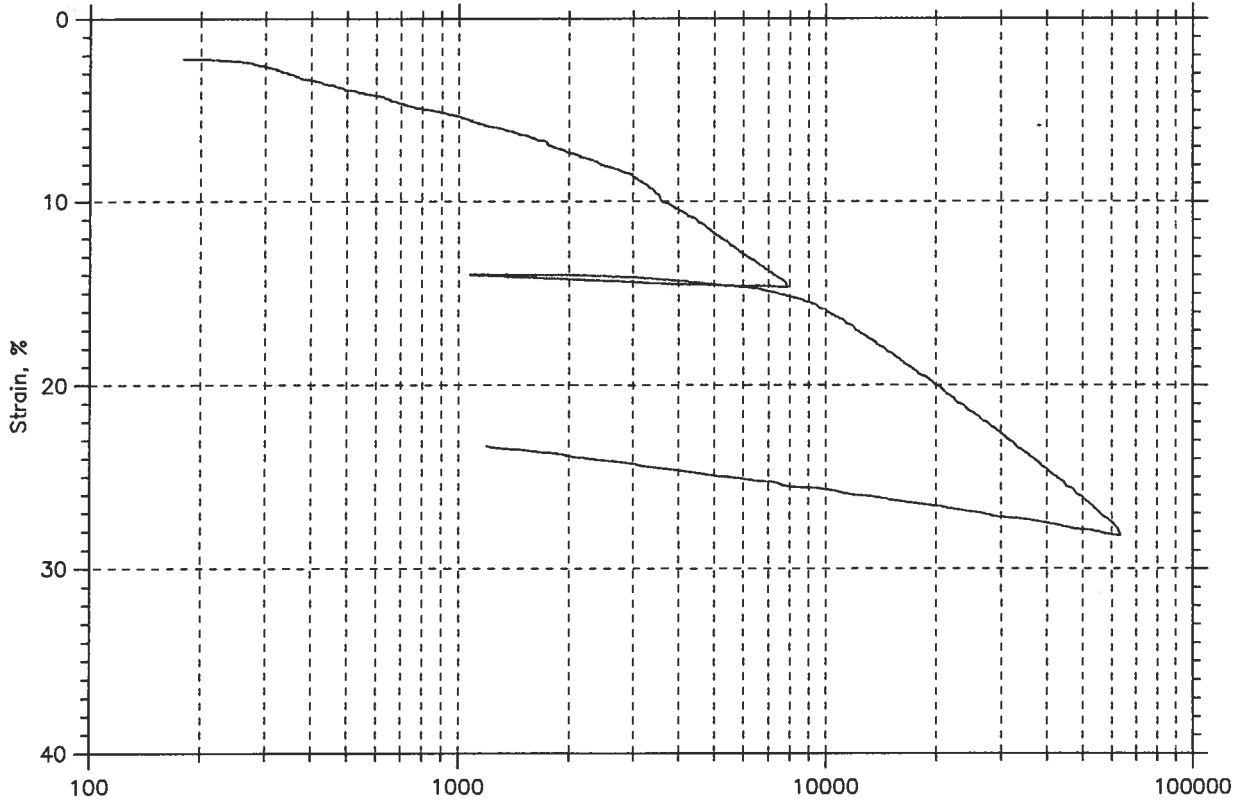
Estimated Specific Gravity: 2.80
 Initial Void Ratio: 0.98
 Final Void Ratio: 0.50

Liquid Limit: 41
 Plastic Limit: 17
 Plasticity Index: 24

Initial Height: 1.00 in
 Specimen Diameter: 2.50 in

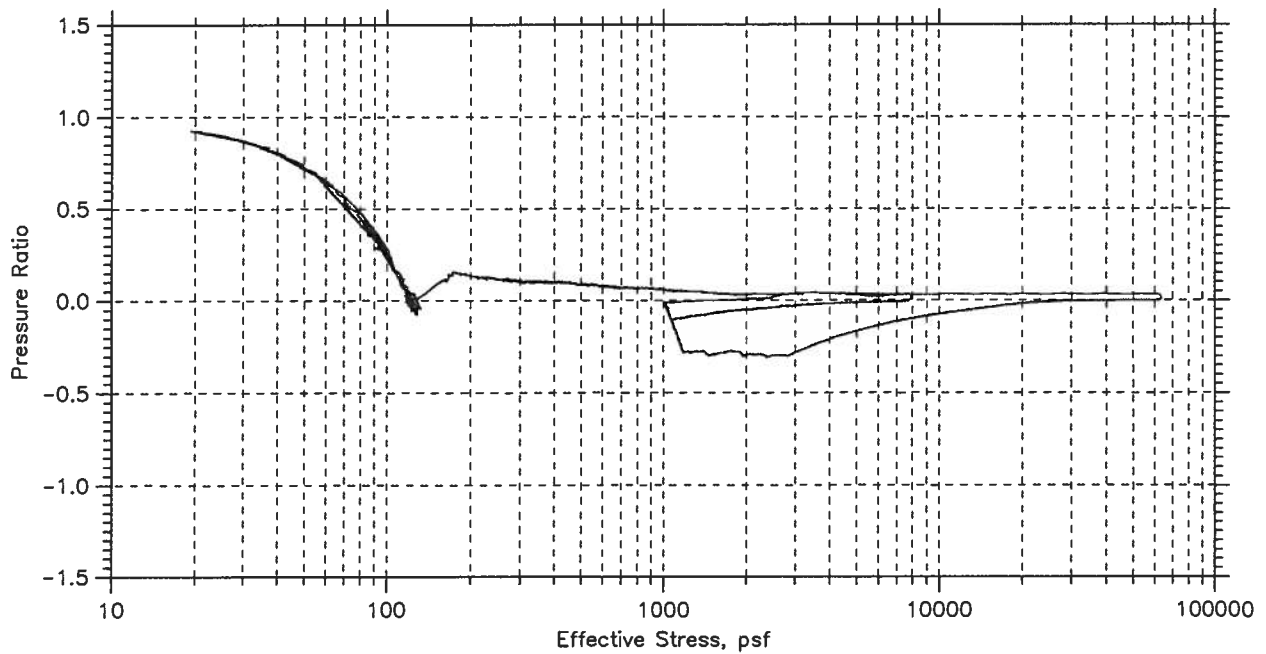
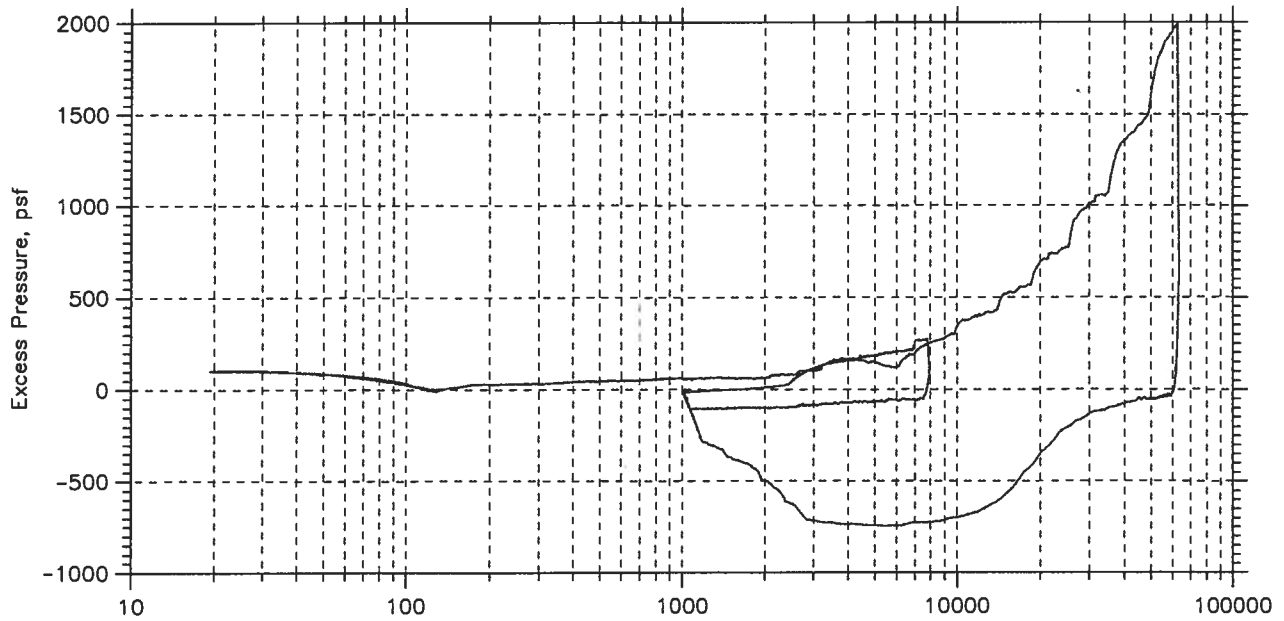
	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	3217	RING		vrayum
Wt. Container + Wet Soil, gm	211.83	353.9	336.26	140.32
Wt. Container + Dry Soil, gm	163.17	318.01	318.01	122.08
Wt. Container, gm	8.29	204.15	204.15	8.27
Wt. Dry Soil, gm	154.88	113.86	113.86	113.81
Water Content, %	31.42	31.52	16.03	16.03
Void Ratio	---	0.98	0.50	---
Degree of Saturation, %	---	90.23	90.62	---
Dry Unit Weight, pcf	---	88.366	116.9	---

Constant Rate of Consolidation
 Constant Strain Rate by ASTM D4186
 Summary Report



Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-10	Tested By: md	Checked By: jdt
Sample No.: U-1	Test Date: 08/25/08	Depth: 25-27
Test No.: CRC-2	Sample Type: tube	Elevation: ---
Description: Moist, gray clay		
Remarks: System 0		

Constant Rate of Consolidation
 Constant Strain Rate by ASTM D4186
 Pressure Curves



Project: Maine Health	Location: Portland, ME	Project No.: GTX-8427
Boring No.: HA-08-10	Tested By: md	Checked By: jdt
Sample No.: U-1	Test Date: 08/25/08	Depth: 25-27
Test No.: CRC-2	Sample Type: tube	Elevation: ---
Description: Moist, gray clay		
Remarks: System 0		

CRC TEST DATA

Project: Maine Health
 Boring No.: HA-08-10
 Sample No.: U-1
 Test No.: CRC-2

Location: Portland, ME
 Tested By: md
 Test Date: 08/25/08
 Sample Type: tube

Project No.: GTX-8427
 Checked By: jdt
 Depth: 25-27
 Elevation: ---

Soil Description: Moist, gray clay
 Remarks: System 0

Estimated Specific Gravity: 2.90
 Initial Void Ratio: 1.13
 Final Void Ratio: 0.64

Liquid Limit: 38
 Plastic Limit: 17
 Plasticity Index: 21

Initial Height: 1.00 in
 Specimen Diameter: 2.50 in

Container ID	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
	organic	RING		3171
Wt. Container + Wet Soil, gm	118.23	368.58	349.88	26.19
Wt. Container + Dry Soil, gm	88.77	325.88	325.88	22.93
Wt. Container, gm	8.07	216.55	216.55	8.08
Wt. Dry Soil, gm	80.7	109.33	109.33	14.85
Water Content, %	36.51	39.06	21.95	21.95
Void Ratio	---	1.13	0.64	---
Degree of Saturation, %	---	99.91	99.29	---
Dry Unit Weight, pcf	---	84.848	110.31	---

APPENDIX E

Soil Screening Headspace Reports

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP	O. Lawlor
INSTRUMENT	Thermo 580B	DATE SAMPLED	7/23/2008 - 7/24/2008
DATE CALIBRATED ⁽¹⁾	7/28/2008	LAMP (eV)	10.6
AMBIENT TEMPERATURE	RT	CALIBRATED BY	DAD
		SCREENING LOC.	H&A Portland Lab

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm) ⁽²⁾	Back-Ground Reading (ppm) ⁽²⁾	Remarks	GC ⁽³⁾	Containers			
								Drill Jar			
HA08-3	S1	1.0-3.0	well graded gravel with sand	0.9	0.0			X			
HA08-3	S2	3.0-5.0	silty sand with ash & cinders	1.2	0.0			X			
HA08-3	S3	5.0-7.0	cinders, ash, brick, and coal	2.8	0.0			X			
HA08-3	S4	7.0-9.0	poorly-graded gravel, cinders	1.5	0.0			X			
HA08-3	S5	10.0-12.0	silty sand, cinders and ash	14.9	0.0			X			
HA08-3	S6	12.0-14.0	silt with sand, shells, organics	0.0	0.0			X			
HA08-3	S7	14.0-16.0	silt with sand, shells, H2S odor	0.0	0.0			X			
HA08-6	S1	0.0-2.0	silty sand	0.0	0.0			X			
HA08-6	S2	2.0-4.0	silty sand, brick, cinders, wood	0.0	0.0	Tinfoil cover torn		X			
HA08-6	S3	4.0-6.0	silty to well graded sand	0.0	0.0			X			
HA08-6	S4	6.0-8.0	poorly graded sand	0.0	0.0			X			
HA08-6	S5	8.0-10.0	silty sand with gravel	0.0	0.0			X			
HA08-6	S6	10.0-12.0	silty sand w/ gravel, brick, shell	0.0	0.0			X			
HA08-6	S7	12.0-14.0	sandy silt, shell fragments	0.0	0.0			X			
HA08-9	S1	0.0-2.0	silty gravel with sand, org odor	0.0	0.0			X			
HA08-9	S2	2.0-4.0	cinders and ash to silty sand	0.0	0.0			X			
HA08-9	S3	4.0-6.0	silty sand	0.0	0.0			X			
HA08-9	S4	6.0-8.0	silty sand with gravel	0.0	0.0			X			
HA08-9	S5	8.0-10.0	silty sand with gravel	0.0	0.0			X			
HA08-9	S6	10.0-12.0	silty sand, wood and glass	0.0	0.0			X			
HA08-9	S7	12.0-14.0	silt, wood fragments, org odor	0.0	0.0	Poor sample recovery		X			
HA08-9	S8	14.0-16.0	lean clay	0.0	0.0			X			
HA08-12	S1	0.0-2.0	silty sand with gravel, cinders	0.0	0.0			X			
HA08-12	S2	2.0-4.0	silty sand with gravel, cinders	0.0	0.0			X			
HA08-12	S3	4.0-6.0	silty sand - poorly graded sand	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:		Received by:		Relinquished by:		Received by:	
Sign: NA		Sign: NA		Sign: NA		Sign: NA	
Print: NA		Print: NA		Print: NA		Print: NA	
Firm: NA		Firm: NA		Firm: NA		Firm: NA	
Date: NA	Time: NA	Date: NA	Time: NA	Date: NA	Time: NA	Date: NA	Time: NA

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP	O. Lawlor
INSTRUMENT	Thermo 580B	DATE SAMPLED	7/30/2008 - 8/4/2008
DATE CALIBRATED ⁽¹⁾	7/30/2008	LAMP (eV)	10.6
AMBIENT TEMPERATURE	RT	CALIBRATED BY	DAD
		DATE SCREENED	8/6/2008
		SCREENING LOC.	H&A Portland Lab

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm) ⁽²⁾	Back-Ground Reading (ppm) ⁽²⁾	Remarks	GC ⁽³⁾	Containers			
								Drill Jar			
HA08-4	S1	0.5-2.5	sand with silt, cinder and ash	69.0	0.0			X			
HA08-4	S2	2.5-4.5	sand with silt, cinder and ash	55.0	0.0			X			
HA08-4	S3	5.0-7.0	silty sand, cinder and ash	0.0	0.0			X			
HA08-4	S4	7.0-9.0	poorly graded sand with wood	40.0	0.0			X			
HA08-4	S5	9.0-11.0	sand w/ silt, wood, glass, shells	0.0	0.0			X			
HA08-5	S1	0.0-2.0	poorly graded sand, cinder, ash	123.0	0.0			X			
HA08-5	S2	2.0-4.0	poorly graded sand, cinder, ash	114.0	0.0			X			
HA08-5	S3	4.0-6.0	poorly graded sand, cinder, ash	6.0	0.0			X			
HA08-5	S4	6.0-8.0	poorly graded sand, cinder, ash	4.2	0.0			X			
HA08-5	S5	8.0-10.0	silty sand, shell and brick	2.5	0.0			X			
HA08-7	S1	0.0-2.0	sand with silt, ash, brick, wood	9.4	0.0			X			
HA08-7	S2	2.0-4.0	sand with silt, ash, brick	4.2	0.0			X			
HA08-7	S3	4.0-6.0	silty sand, cinder and ash	0.8	0.0			X			
HA08-7	S4	6.0-8.0	silty sand, cinder and ash	0.8	0.0			X			
HA08-7	S5	8.0-10.0	well graded sand	0.0	0.0			X			
HA08-7	S6	10.0-12.0	silty sand, trace clay	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	Sign: NA	Sign: NA	Sign: NA
Print: NA	Print: NA	Print: NA	Print: NA
Firm: NA	Firm: NA	Firm: NA	Firm: NA
Date: NA Time: NA	Date: NA Time: NA	Date: NA Time: NA	Date: NA Time: NA

HEADSPACE SCREENING REPORT

PROJECT	MaineHealth / UnitedWay Development	H&A FILE NO.	35611-000
LOCATION	Portland, Maine	PROJECT MGR.	W. Chadbourne
CLIENT	Maine Medical Center	FIELD REP	O. Lawlor
INSTRUMENT	Thermo 580B	DATE SAMPLED	8/6/2008 - 8/13/2008
DATE CALIBRATED ⁽¹⁾		LAMP (eV)	10.6
AMBIENT TEMPERATURE	RT	CALIBRATED BY	DAD
		SCREENING LOC.	H&A Portland Lab

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm) ⁽²⁾	Back-Ground Reading (ppm) ⁽²⁾	Remarks	GC ⁽³⁾	Containers			
								Drill Jar			
HA08-8	S1	0.0-2.0	poorly graded sand with gravel	0.0	0.0			X			
HA08-8	S2	2.0-4.0	silty sand with gravel	0.0	0.0			X			
HA08-8	S3	5.0-7.0	silty sand with gravel	5.9	0.0			X			
HA08-8	S4	7.0-9.0	silty sand with gravel	14.5	0.0			X			
HA08-1	S1	1.0-3.0	well graded gravel, concrete	0.0	0.0			X			
HA08-1	S2	3.0-5.0	silty sand, concrete, ash	0.0	0.0			X			
HA08-1	S3	5.0-7.0	silty sand	0.0	0.0	Tinfoil cover torn		X			
HA08-1	S4	7.0-9.0	silty sand	0.0	0.0			X			
HA08-1	S5	10.0-12.0	sandy organic soil, with shells	0.0	0.0			X			
HA08-1	S6	12.0-14.0	sandy organic soil, with shells	0.0	0.0	Tinfoil cover torn		X			
HA08-10	S1	0.0-2.0	sandy silt, brick	0.0	0.0			X			
HA08-10	S2	2.0-4.0	silty sand	0.0	0.0			X			
HA08-10	S3	4.0-6.0	silty sand	0.0	0.0			X			
HA08-10	S4	6.0-8.0	silty sand, wood w/ creosote	0.0	0.0			X			
HA08-10	S5	8.0-10.0	sandy organic silt, brick, metal	0.0	0.0			X			
HA08-2	S1	0.0-2.0	silty sand, wood and ash	0.0	0.0			X			
HA08-2	S2	4.0-6.0	poorly graded sand	0.0	0.0			X			
HA08-2	S3	6.0-8.0	poorly graded sand	0.0	0.0			X			
HA08-2	S4	8.0-10.0	silty gravel, shells and wood	0.0	0.0			X			
HA08-2	S5	10.0-12.0	poorly graded gravel	0.0	0.0			X			

1. Instrument calibrated to the manufacturer standard.
 2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
 3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign: NA	Sign: NA	Sign: NA	Sign: NA
Print: NA	Print: NA	Print: NA	Print: NA
Firm: NA	Firm: NA	Firm: NA	Firm: NA
Date: NA Time: NA	Date: NA Time: NA	Date: NA Time: NA	Date: NA Time: NA

APPENDIX F

Historic Sanborn Maps

PORTLAND

MAINE

PUBLISHED BY THE
Sanborn Map & Publishing Co.

LIMITED
 117 BROADWAY NEW YORK

SCALE 50 FT. TO AN INCH

OCT. 1886



INDEX.

STREETS.		D		E		F		G		H		I		J		K		L		M		N		O		P		Q		R		S		T		U		V		W		X		Y		Z	
Adams	1-10	D	1-10	E	1-10	F	1-10	G	1-10	H	1-10	I	1-10	J	1-10	K	1-10	L	1-10	M	1-10	N	1-10	O	1-10	P	1-10	Q	1-10	R	1-10	S	1-10	T	1-10	U	1-10	V	1-10	W	1-10	X	1-10	Y	1-10	Z	1-10

SPECIALS.

* Indicates only one side of street shown.

INSURANCE MAPS

Portland

MAINE

VOLUME ONE

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11 BROADWAY, NEW YORK

1914

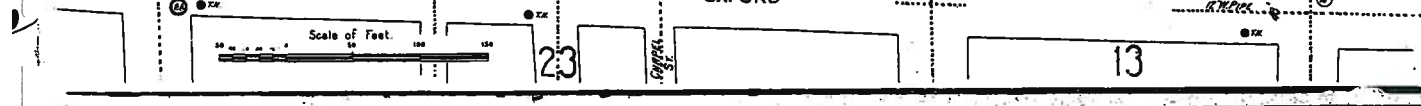
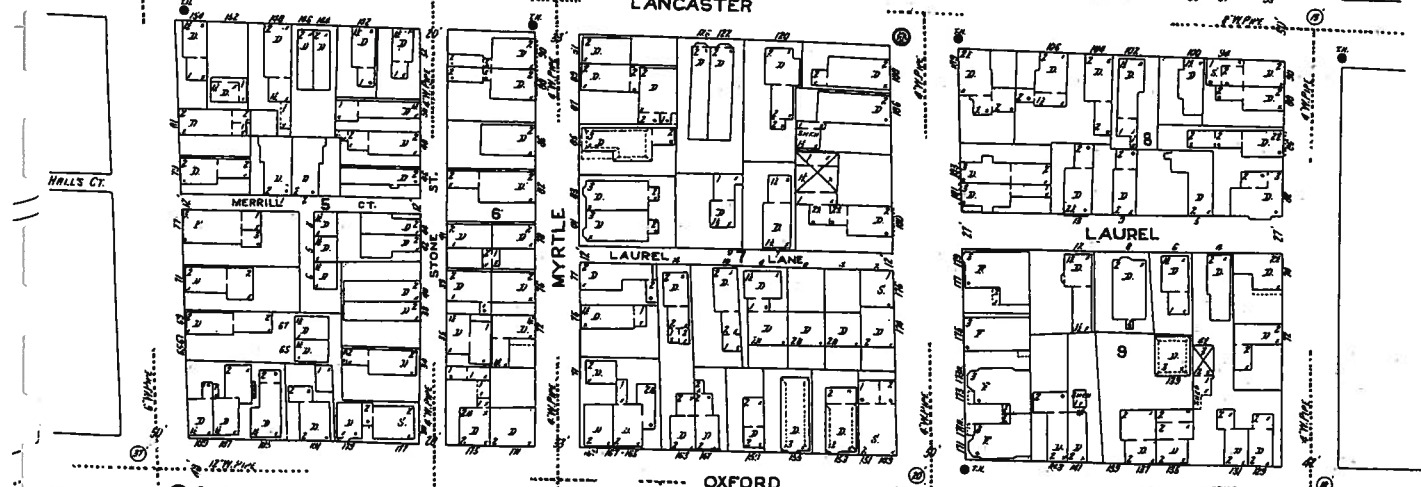
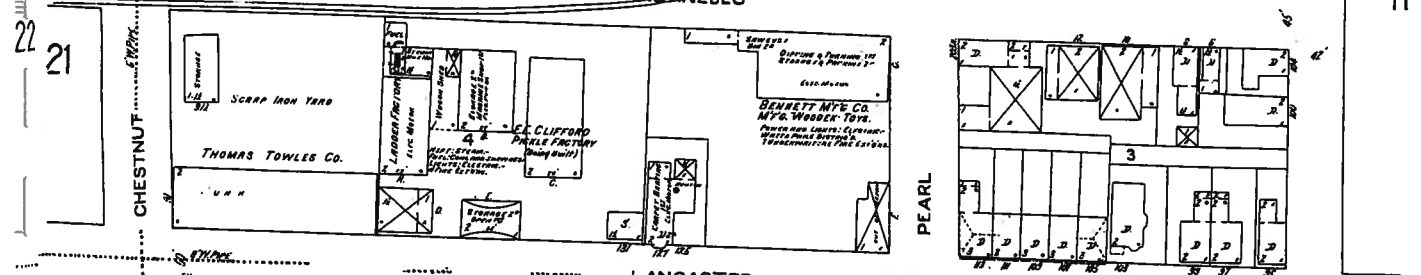
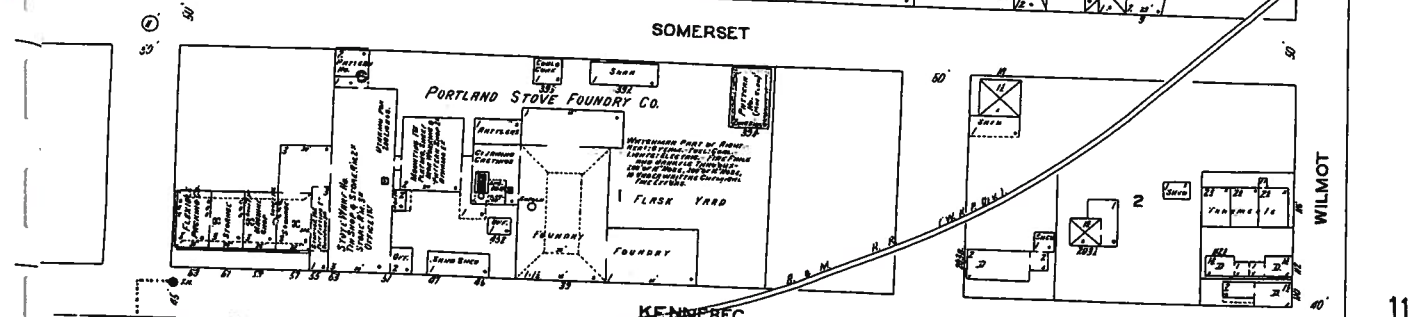
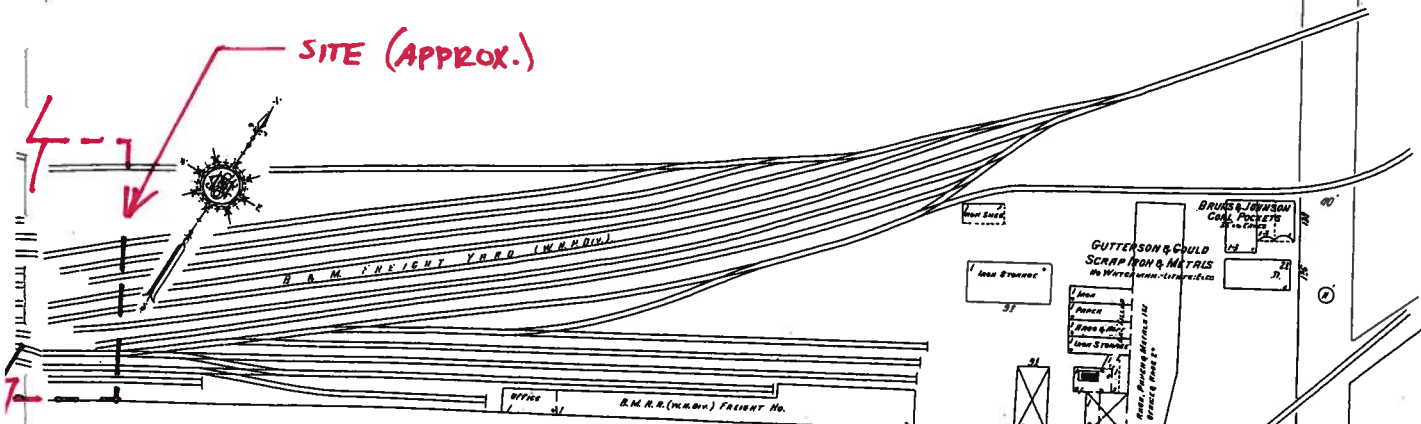
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CENSUS
GEOGRAPHY FILES
RECEIVED
JAN 15 1945

SITE (APPROX.)



Scale of Feet. 0 50 100 150

1909

INSURANCE MAPS

Portland

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SITE (APPROX.)

21

ME 003

35

35

35

SOMERSET

KENNEBEC

LANCASTER

OXFORD

PREBLE

36

22

CEDAR

CHESTNUT

ELM

23

Scale of Feet



THE ENCLAND METAL CONSTRUCTION WORKS

PAINT & GLASS BLDG. & PAINT W.H.

THE GREAT ATLANTIC & PACIFIC TEA CO. WARE H. Bldg. 1378
ATLANTIC STORAGE & WARE HOUSE INC. Bldg. 1378

SCHUYLER & TOLSON CO. WARE H. Bldg. 1378
CASHMERE BROS. CO. WARE H. Bldg. 1378

CASHMERE BROS. CO. BAKERY

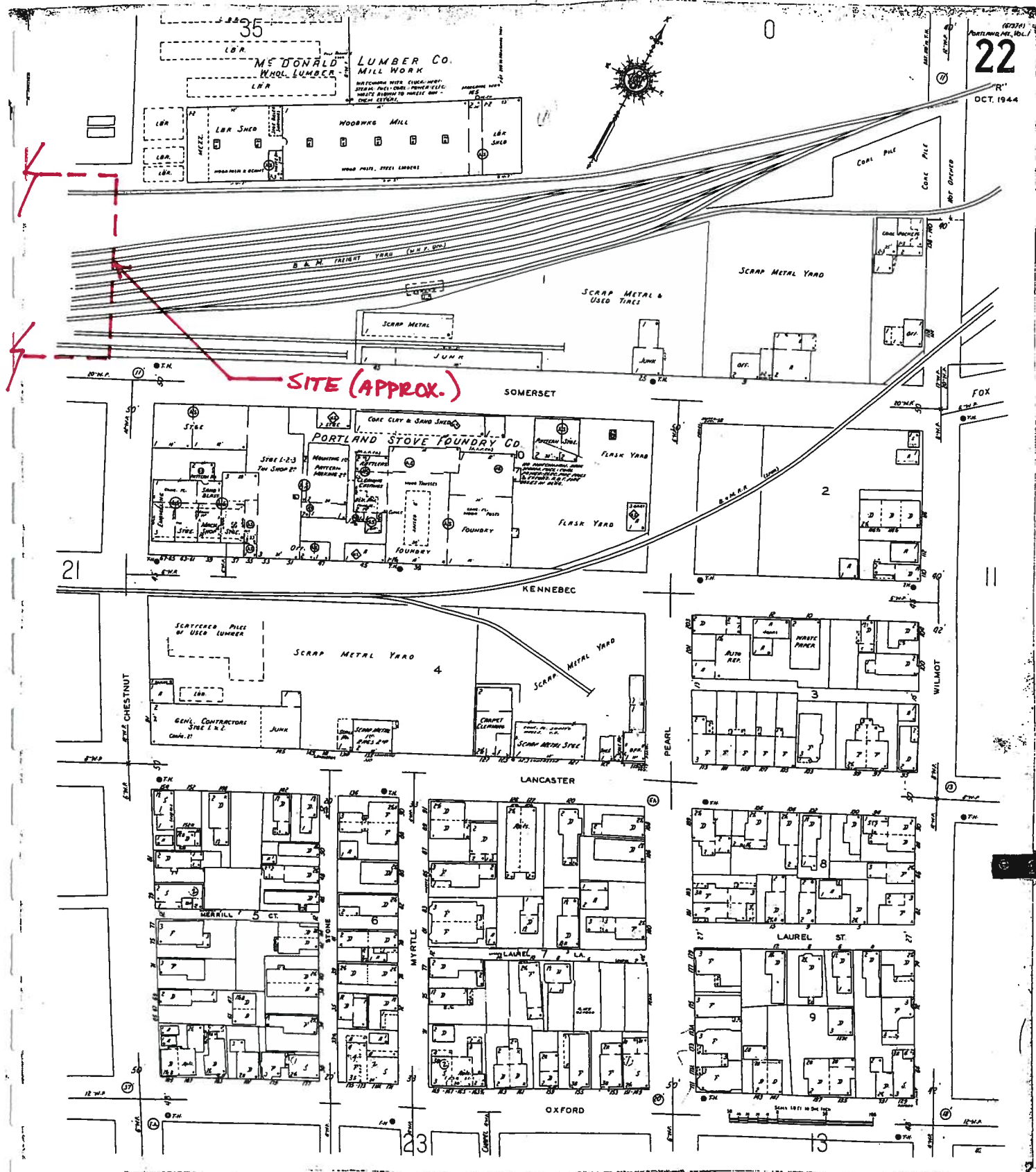
H. J. HEINE CO. WARE H. Bldg. 1378
WINE & FOOD PRODUCTS

WARE H. Bldg. 1378
WARE H. Bldg. 1378
WARE H. Bldg. 1378

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WARE H. Bldg. 1378

1909-1950



SITE (APPROX.)

1909-1950

Attachment B



MEMORANDUM

4 December 2008
File No. 35611-000, -010

TO: Maine Medical Center
Mr. Daniel F. Doughty, AIA,
Ms. Nancy Innes

C: Harriman Associates, Inc.; Patrick Costin, AIA, Keith Brenner, P.E.
Becker Structural Engineers; Todd Neal, P.E.
Scott Simons Architects; Scott Simons, AIA
Woodard & Curran; Barry Sheff, P.E.
Consigli Construction Co.; David Thomas

FROM: Haley & Aldrich, Inc.
Bryan C. Steinert, Wayne A. Chadbourne, P.E.
BCS *WAC*

SUBJECT: Results of Test Pit Exploration Program
Maine Health/United Way Development
Somerset and Chestnut Streets
Portland, Maine

This memorandum presents a summary of the exploratory test pit excavations performed for the subject project. This work was performed in accordance with our proposal dated 2 July 2008 and your subsequent authorization. The information summarized herein will be used by Haley & Aldrich and the rest of the design team to assess dewatering requirements for construction of the below-grade elements (i.e., grade beams, pile caps, elevator pits, utilities) of the proposed parking garage and office building.

ELEVATION DATUM

Elevations referenced herein are in feet and reference Portland City Datum (PCD). Portland City Datum relates to the National Geodetic Vertical Datum of 1929 (NGVD 29) as follows:

$$\text{Elevation in feet (PCD)} = \text{Elevation in ft (NGVD 29)} + 0.02 \text{ ft}$$

TEST PIT EXPLORATIONS

Three exploratory test pits, designated TP-201 through TP-203, were excavated by Environmental Projects, Inc. (EPI) of Auburn, Maine on 20 October 2008. The test pits were excavated in the vicinity of previously installed groundwater observation wells using a Komatsu PC 35MR excavator. The test pits were excavated to depths ranging from approximately 8 to 11 ft below existing ground surface (BGS). A Haley & Aldrich engineer

was on-site to monitor the excavations and to prepare logs detailing the soil and groundwater conditions encountered in each test pit. Upon completion, each excavation was backfilled up to ground surface. Approximate 16-in. thick lifts of excavated soils were used to backfill each test pit excavation. Each lift was moderately compacted using down-pressure from the excavator bucket. The approximate test pit locations are shown on the attached site plan. Test pit logs documenting encountered subsurface conditions and photographs taken during the test pit program are also attached.

SOIL AND GROUNDWATER CONDITIONS

Soil Conditions

Based on our review of historic Sanborn maps, this area of Bayside was once a tidal mudflat. At various times over the past century the site has been filled as the area has undergone development. Based on our test borings and test pits, 10 to 15 ft of man-placed fill soils are present within the footprints of the proposed office building and garage. As is typical of this material, the fill encountered in the test pit excavations was not uniform and primarily consisted of the following soil types:

- silty SAND (SM) with varying percentages of gravel
- poorly graded to well graded SAND (SP to SW) with varying percentages of silt and gravel

Please note that we encountered an undetermined thickness of reworked clay fill in the western portion of TP-203 below El. 5.5. Clay fill was not encountered in the other test pits or previous test borings (including boring HA08-5(OW) located approximately 10 ft northeast of TP-203). The fill soils generally contained ash, cinders, brick, concrete and porcelain fragments (see photographs). In addition, timber railroad ties and steel rails were encountered between 1 and 2 ft BGS in TP-201 (see photographs).

Groundwater Conditions

Groundwater levels have been measured in the observation wells installed in completed boreholes HA08-5, HA08-7 and HA08-12 over the past several months. Back in August, downhole transducers were installed in these wells and groundwater levels were measured every 15 minutes (from 7 August to 22 August 2008). This was done to estimate the depth to the static groundwater levels at the site and to determine whether the groundwater levels are influenced by tidal fluctuations in nearby Back Cove. Based on the data collected in August 2008, groundwater levels were measured between 6 and 8 ft below existing ground surface, and the levels in the wells were determined not to be influenced by tidal fluctuations in Back Cove.

During the test pit program in October 2008, groundwater was encountered in each test pit excavation and ranged in depth from 6.5 to 10.5 ft BGS (stabilized levels). Water levels in the nearby observation wells were also measured during execution of the test pit program.

Groundwater levels have been measured in the observations wells twice since October 2008. The most recent measurements (1 December 2008) were conducted after a period of significant precipitation had occurred (2.0 in. of rain on 25 November and 0.75 in. of rain on 30 November).

A tabular summary of the water levels measured in the observation wells and test pits is provided below. Please note that the elevations are approximate and were based on ground topographic data provided by Woodard & Curran.

Exploration	Ave. Groundwater Level Measured in Observation Well August 2008	Groundwater Level Measured in Observation Well on 10/20/08	Groundwater Level Measured in Test Pit Excavated on 10/20/08	Groundwater Level Measured in Observation Well on 12/1/08
TP-201/ HA08-12(OW)	El. 4.8	El. 5.1	El. 4.5	El. 5.8
TP-202/ HA08-7(OW)	El. 4.3	El. 4.6	El. 4.0	El. 5.0
TP-203/ HA08-5(OW)	El. 1.3	El. 0.9	El. -1.5	El. 1.1

It is our opinion that the relatively low groundwater levels measured in TP-203 and HA08-5(OW) are a result of the presence of the clay fill material that is present in this area. The plan extent of the clay fill is not known. We have attached the groundwater monitoring reports for the three observation wells at the site with updated data through 1 December 2008.

Please note that the water levels in the observation wells rose as much as 1 ft from the October reading to the early December reading.

The test pits were excavated to depths coincident with the depth that groundwater infiltration into the test pits was observed. Based on measurements of recharge/recovery of the water levels in the test pits, we estimated groundwater infiltration rates of 5 to 10 gallons per minute (gpm). Each test pit was left open for approximately 1.5 hours. Water levels in the open test pits were measured and appeared to stabilize after approximately 30 minutes.

CONSTRUCTION DEWATERING

Based on a proposed lowest-level floor slab at El. 11 and an average pile cap thickness of 4 ft, we estimate that the bottom of the excavations for the pile caps and grade beams will be at approximately El. 6 (approximate). Also, it is our understanding that the bottom of the elevator pit excavations will be approximately 1 to 2 ft below the bottom of the pile caps/grade beams, or approximately El. 4.

Based on the anticipated depth of excavations and the measured groundwater data summarized above, we anticipate that groundwater will be encountered in excavations required for construction of both the grade beams and pile caps and elevator pits. Based on our understanding of the current construction schedule, excavation work for grade beams, pile caps and elevator pits will be conducted in the winter of 2009. Because of this, we anticipate that groundwater levels encountered at the site will be within the levels summarized in the table above. Please note however, that we do not have any groundwater data during the springtime snowmelt period, a time of the year when groundwater levels are typically the highest. As a result, if the foundation excavation and utility installation work is delayed and slips into the spring of 2009, the groundwater levels encountered at that time could be several feet higher than El. 6.

Based on the anticipated bottom of excavation levels, we expect that dewatering could be performed using a series of open sumps and temporary ditches within the excavations. Sumps should be capable of pumping at least 10 gpm and be provided with filters suitable to prevent pumping of fine-grained soil particles. Rainwater or snowmelt should be directed away from exposed soil bearing surfaces.

Dewatering and discharge of dewatering effluent should be performed in accordance with all applicable local, state and federal regulations. Due to physical site constraints, we anticipate that on-site recharge will not be feasible and that dewatering discharge will likely need to be directed to the local storm drain system. Sedimentation tanks and other treatment equipment may be required for legal disposal of the effluent. If dewatering effluent is discharged into a storm drain system that empties into the Back Cove, a NPDES permit will be required for legal disposal of the effluent.

CLOSURE

We trust this provides sufficient information to proceed with design development and estimation of project costs for construction dewatering. Please do not hesitate to contact us if you require additional information.

Attachments:

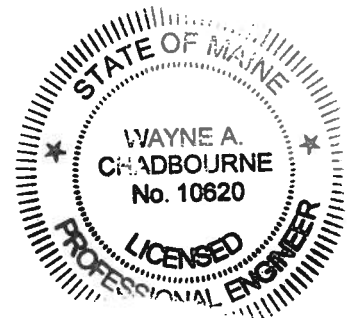
Test Pit Location Plan (1 sheet)

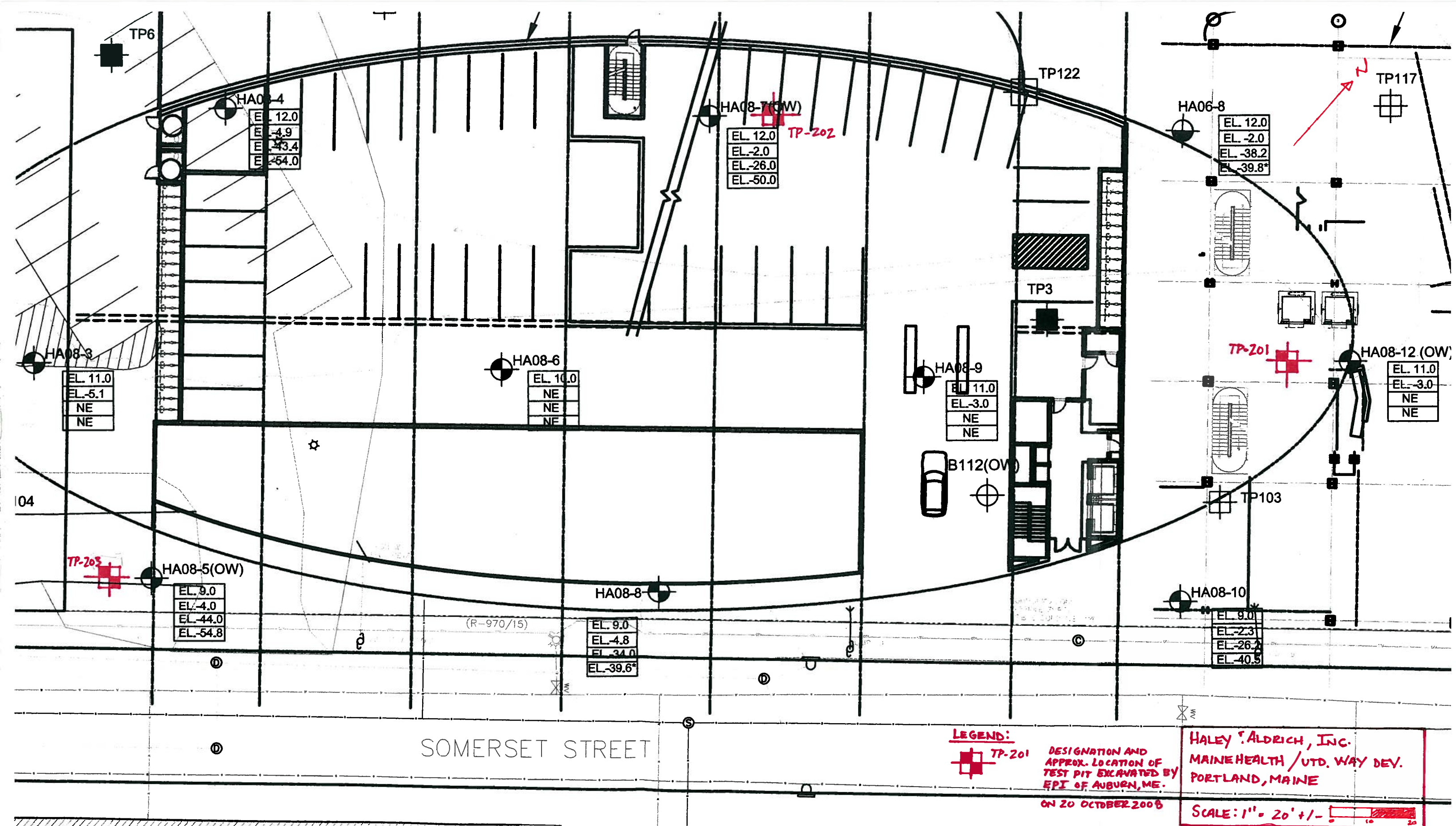
Test Pit Logs (3 sheets)

Photographs (3 sheets)

Groundwater Monitoring Data (3 sheets)

G:\PROJECTS\35611\Groundwater Infiltration Memo\2008-1204-bcs&wac-testpitmemo-f.doc





LEGEND:
 TP-201
 DESIGNATION AND APPROX. LOCATION OF TEST PIT EXCAVATED BY EPI OF AUBURN, ME.
 ON 20 OCTOBER 2008

HALEY ALDRICH, INC.
 MAINE HEALTH / UTD. WAY DEV.
 PORTLAND, MAINE

SCALE: 1" = 20' +/-

LEGEND:

HA08-1
 DESIGNATION AND LOCATION OF TEST BORING DRILLED BY MAINE TEST BORINGS, INC. OF BREWER, MAINE IN JULY AND AUGUST 2008

HA06-7
 DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY MAINE TEST BORINGS, INC. OF BREWER, MAINE IN AUGUST 2006

---11--- ELEVATION CONTOUR OF EXISTING GROUND SURFACE

(OW) DENOTES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

NE DENOTES SOIL STRATA, ROCK WAS NOT ENCOUNTERED

ORIENTATION OF EXISTING ROAD & CURRAN ON 21 JULY

CAD FILE " FP01.dwg "



Project Maine Health / United Way Development
Location Somerset & Chestnut Streets, Portland, Maine
Client Maine Medical Center
Contractor Environmental Projects, Inc.
Equipment Used Komatsu PC 35 MR

File No. 35611-000
H&A Rep B. Steinert
Date 20 October 2008
Weather Sunny, 50°

Ground El.: 11 +/- **Location:** See Plan **Groundwater depths/entry rates (In./min.):** 4.6 gal/min
El. Datum: Portland City Datum

Depth (ft)	Sample ID	Stratum Change Elev./Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (color, natural grain size and artificial component percentage estimates, manual test properties, structure, odors, moisture, other descriptions and observations GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Tests				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0			SW- SM	Gray-brown, well-graded SAND with silt and gravel (SW-SM), mps 8 in., no structure, no odor, dry, bricks, concrete, wood throughout, railroad ties and steel tracks in north side of test pit at ~1.5 ft -FILL-	10	15	15	35	15	10				
2		2.0	SP	Black, poorly graded SAND with silt (SP), mps 4.75 mm, no structure, no odor, dry, some coal/ash fragments, trace organics -FILL-			5	50	30	15				
4		3.5	SP	Tan to yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, moist to wet with depth -FILL-			10	60	20	10				
8		8.0		-BOTTOM OF EXCAVATION-										

Obstructions: None.
 Miscellaneous debris (bricks, wood, granite pavers), rail timbers, tracks present throughout.

Remarks: Water observed seeping into test pit excavation at approximately 8 ft below existing ground surface.

Field Tests
 Dilatancy R - Rapid S - Slow N - None
 Toughness L - Low M - Medium H - High
 Plasticity N - Nonplastic L - Low M - Medium H - High
 Dry Strength N - None L - Low M - Medium H - High V - Very High

Standing Water in Completed Pit			Boulders			Test Pit Dimensions (ft)	
at depth	6.5	ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Length x Width (ft) 6 x 3	
measured after	31 min.	hours elapsed	12 to 24	NA	= NA	Pit Depth (ft) 8.0	
			over 24	NA	= NA		

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

HA-TESTPIT-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TP07-1.GDT G:\PROJECTS\35611\FIELD PROGRAMS\35611 TP201-203.GPJ 4 Dec 08

Project Maine Health / United Way Development
Location Somerset & Chestnut Streets, Portland, Maine
Client Maine Medical Center
Contractor Environmental Projects, Inc.
Equipment Used Komatsu PC 35 MR

File No. 35611-000
H&A Rep B. Steinert
Date 20 October 2008
Weather Sunny, 50°

Ground El.: 12 +/- **Location:** See Plan **Groundwater depths/entry rates (in./min.):** 3.7 gal/min
EI. Datum: Portland City Datum

Depth (ft)	Sample ID	Stratum Change Elev./Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (color, natural grain size and artificial component percentage estimates, manual test properties, structure, odors, moisture, other descriptions and observations GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Tests				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0			SC	Dark brown, clayey SAND (SC), mps 2 in., no structure, slight creosote-like odor, moist, brick and porcelain fragments present, trace organics (rootlets) -FILL-		5	10	30	40	15				
2														
3.5			SP-SM	Black, poorly graded SAND with silt (SP-SM), mps 2 mm, no structure, organic odor, moist, rootlets throughout, probable former topsoil			10	70	20					
4.0			SW	Light brown, well-graded SAND with gravel (SW), mps 3 in., no structure, no odor, moist	5	15	30	25	15	10				
4.5			SM	Black, silty SAND with gravel (SM), mps 2 in., no structure, no odor, moist to wet, trace organics, brick fragments, clinker-like material -FILL-		15	15	35	15	20				
6														
6.5			SP	Tan to yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, moist to wet -FILL-			10	60	15	5				
8														
10														
11.0				-BOTTOM OF EXCAVATION-										

Obstructions: NA	Remarks: Water observed seeping into test pit excavation at approximately 11 ft below existing ground surface.	Field Tests	
		Dilatancy R - Rapid S - Slow N - None Toughness L - Low M - Medium H - High Plasticity N - Nonplastic L - Low M - Medium H - High Dry Strength N - None L - Low M - Medium H - High V - Very High	

Standing Water in Completed Pit		Boulders			Test Pit Dimensions (ft)	
at depth	8.0 ft	Diameter (in.)	Number	Approx. Vol. (cu.ft)	Pit Length x Width (ft) 6 x 3	
measured after	18 min. hours elapsed	12 to 24	NA	= NA	Pit Depth (ft) 11.0	
		over 24	NA	= NA		

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

HA-TESTPIT-07-1 HA-LUB07-1R-POR-06-08-08.GLB HA-TP07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611_TP201-203.GPJ 4 Dec 08

TEST PIT LOG

Test Pit No. TP-203

Project Maine Health / United Way Development
Location Somerset & Chestnut Streets, Portland, Maine
Client Maine Medical Center
Contractor Environmental Projects, Inc.
Equipment Used Komatsu PC 35 MR

File No. 35611-000
H&A Rep B. Steinert
Date 20 October 2008
Weather Sunny, 50°

Ground El.: 9 +/- **Location:** See Plan **Groundwater depths/entry rates (in./min.):** 4.6 gal/min
El. Datum: Portland City Datum

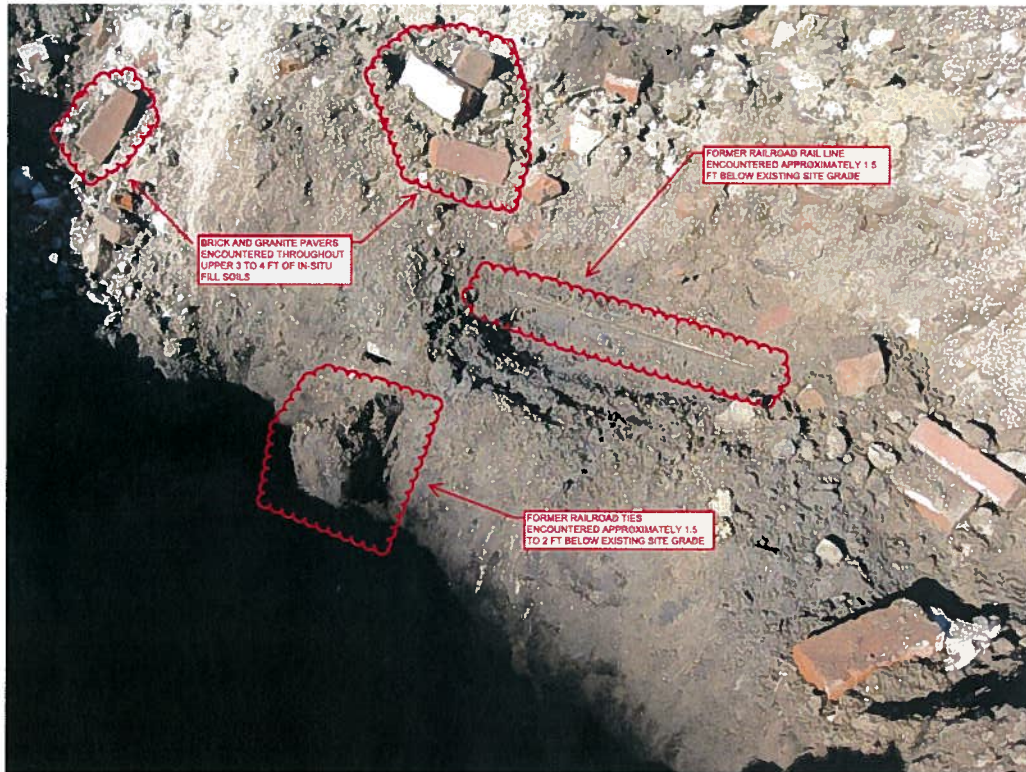
Depth (ft)	Sample ID	Stratum Change Elev./ Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (color, natural grain size and artificial component percentage estimates, manual test properties, structure, odors, moisture, other descriptions and observations GEOLOGIC INTERPRETATION)	Gravel		Sand			Field Tests				
					% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0			SW- SM	Gray-brown, well-graded SAND with silt (SW-SM), mps 0.75 in., no structure, no odor, moist, trace brick fragments -FILL-		5	25	45	15	10				
2		2.0	SP	Tan to yellow-brown, poorly graded SAND (SP), mps 4.75 mm, no structure, no odor, moist			10	60	20	10				
2.7		2.7	SW	Dark brown to black, well-graded SAND with gravel (SW), mps 3 in., no structure, no odor, moist to wet	15	10	25	35	10	5				
4		3.5	SW- SM	Brown, well-graded SAND with silt (SW-SM), mps 4 in., no structure, no odor, moist, cinders, ash, bricks, concrete fragments present -FILL- Note: Gray, lean CLAY with bricks and little fine to medium sand observed in western third of test pit.			35	20	30	15				
6														
8														
10														
		11.0		-BOTTOM OF EXCAVATION-										

Obstructions: NA	Remarks: Water observed seeping into test pit excavation at approximately 11 ft below existing ground surface.	Field Tests Dilatancy R - Rapid S - Slow N - None Toughness L - Low M - Medium H - High Plasticity N - Nonplastic L - Low M - Medium H - High Dry Strength N - None L - Low M - Medium H - High V - Very High
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Standing Water In Completed Pit at depth 10.5 ft measured after 17 min. hours elapsed	Boulders Diameter (in.) Number Approx. Vol. (cu.ft) 12 to 24 NA = NA over 24 NA = NA	Test Pit Dimensions (ft) Pit Length x Width (ft) 7 x 3 Pit Depth (ft) 11.0
--	--	---

NOTE: Soil identification based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

HA-TESTPIT-07-1 HA-LIB07-1R-POR-06-03-08.GLB HA-TP07-1.GDT G:\PROJECTS\35611\FIELD PROGRAM\35611 TP201-203.GPJ 4 Dec 08



Photograph 1. In-situ fill soils encountered in TP-201, looking northwest (10/20/08).



Photograph 2. In-situ fill soils and groundwater encountered in TP-201, looking northwest (10/20/08).



Photograph 3. In-situ fill soils encountered in TP-202, looking north (10/20/08).



Photograph 4. In-situ fill soils and groundwater encountered in TP-202, looking southeast (10/20/08).

